UBS

Chief economist's comment

Are bond traders better than economists?

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- No, bond traders are not better than economists
- The myth that bond markets can predict recessions has never really worked outside the United States
- Using bond markets to predict recessions only worked because bonds tracked inflation, inflation was high, and inflation linked to the economic cycle
- Now bonds are relatively less interested in inflation, inflation is low, and a large part of US inflation is made up of non-market prices
- Bond markets do tell us some things about what is happening in the economy. This does not include whether a recession is coming

Markets are not as rational as they should be. Investors often cling to myths and legends, as easy ways to explain a complex world. One lasting myth is that the shape of the US bond yield curve can predict recessions. A surprising number of investors think that if long term bond yields are lower than short term interest rates (an inverted yield curve), a recession is about to happen.

Before looking at why this myth is not true today, there are two very obvious reasons not to believe the story. The myth suggests that bond dealers know more about the future than anyone else. Indeed it suggests bond dealers know more about the future than economists. That does not seem very likely.

The myth also suggests that the US yield curve has some magic ability to forecast the future, but other country's yield curves do not. The UK yield curve has inverted for years at a time with no recession. The Japanese yield curve has not inverted since 1991, in spite of one recession after another. The German yield curve inverted ahead of the 1991 economic boom and the 2013 recovery, but failed to invert ahead of the 2016 slowdown. Indeed the US yield curve inverted in 2000 but GDP did not fall (until 2008). If bond yield curves can predict, they should be able to predict everywhere. They do not.

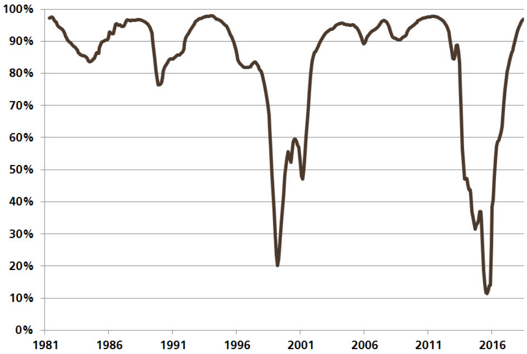
Short term rates

Central banks drive short term interest rates. A central bank's short term interest rates influence a government's cost of borrowing money for two years. The short term part of the bond yield curve will rise if the central bank is raising policy interest rates. The short term part of the bond yield curve will fall if the central bank is cutting policy rates.

Short term interest rate moves do link to the economic future. If a central bank is raising interest rates, the bank may be trying to slow the economy. If short term interest rates go up, that may "predict" a future slowdown if the central bank's policy works. On the other hand, if a central bank is cutting interest rates it might be trying to get the economy going again. If short term interest rates go down investors might expect the economy to improve in the next year or two.

The link between short term government bond yields and central bank policy does give a link between short term government bond yields and the economic outlook.

US 2-year government bonds are strongly influenced by Federal Reserve policy
Five year rolling correlation of Fed Funds and 2-year government bond yields



Source: UBS, Federal Reserve via Haver

How the myth was created

The myth that yield curves predict recessions has its roots in the 1970s. Two things allowed this to happen.

1. Inflation was the most important driver of the long term government bond yield.
2. The economy cycle was the most important driver of inflation.

There are lots of different measures of inflation. For most bond investors it is consumer price inflation that matters most. (The US Federal Reserve uses a different measure of inflation. Bond investors do not care). In the early 1970s US President Nixon's government directly set prices (and wages) in the US. Once that policy ended, consumer price inflation moved between roughly 5% and 15%.

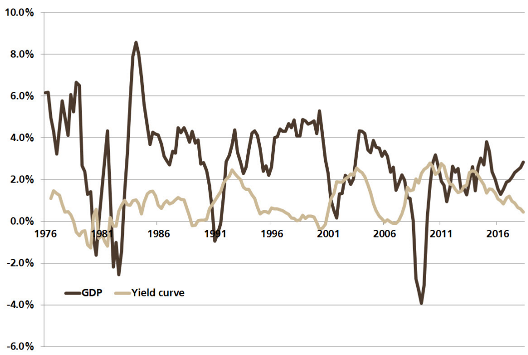
In very simple terms, an economist will split a bond yield into inflation expectations and the real yield. There are other things that go into a bond yield, but inflation and the real yield are the most important. In the 1970s changes in inflation drove changes in the bond yield, because inflation was the biggest part of the bond yield. The high level of inflation meant that the real yield was less important to investors. Getting inflation right mattered most.

The inflation of the 1970s was also a lot more market driven than inflation today. The 1970s were a simpler time. President Nixon spent a lot of time obsessed with the price of hamburger meat. This was not because President Nixon was an avid hamburger consumer. This was because hamburger meat was a key part of the average US consumer's shopping basket.

Economic supply and demand drove around three quarters of the 1975 US consumer price index. Non-economic forces drove a quarter of the prices (rent and home ownership, public transport and medical care).

The economic cycle drove most of the inflation in the 1970s. Inflation mostly drove long term bond yields. Thus long term bond yields were quite good at predicting the economy.

Do yield curves lead? They might have done
US 10-year less 2-year yield, and GDP growth (real, SAAR)



Source: UBS via Haver

If bond dealers thought an economic recession was coming, they would expect lower inflation. If bond dealers expected lower inflation, they would reduce long term government bond yields (as bond yields were mainly about inflation).

All this meant that in the high inflation 1970s the yield curve should have inverted before a recession. Bond dealers would expect tighter monetary policy would lower inflation, and would reduce long term government bond yields. The yield curve would invert because the inflation outlook changed.

"This time it's different" (trust me, I'm an economist)

Another myth in economics is that economists should not say "this time it's different". Clearly this is a silly position to take. The world changes all the time. An economist should be very careful about assuming change, but that does not mean that change does not happen. There are two changes to the world today.

1. Inflation is not the most important driver of the long term government bond yield.
2. The economy cycle is a less important driver of inflation.

Over the past twenty five years or so more and more of the world's central banks have become independent. Independent central banks, run by economists, know how to handle inflation. As a result inflation rates in the US and elsewhere have come down. Since 1993, G7 average inflation has almost never risen above 3%. Inflation rates are different from the 1970s. This means that the real yield has become relatively more important and the inflation rate has become relatively less important it setting bond yields.

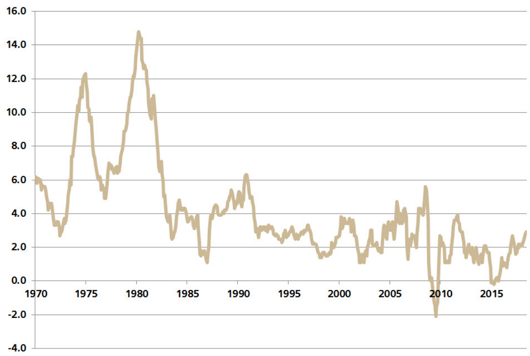
Non-market forces are more important in driving today's inflation rate. The single most important price in the consumer price inflation index in the US is "owners' equivalent rent" (OER). OER is an entirely made up price. No one actually pays it. OER, rent, medical costs, public transport and education now account for around 45% of the consumer price index. Because the US government changes other prices before including them in the consumer price index, over half of US inflation today is not driven by the market.

Investors have to spend more time looking at real yields to understand the yield curve. The US Federal Reserve estimates that real yields are around 0.6% lower as a result of quantitative policy. That would suggest that a -1.0% yield curve today would be the same as a -0.40% yield curve from before quantitative policy. Quantitative policy forces central banks to buy bonds, lowering their yield.

Almost two thirds of global foreign exchange reserves are held in dollars. Central banks can normally only invest foreign exchange reserves in bonds or cash. From 2000 to 2006 foreign central bank reserves rose 200%. US bonds outstanding rose 50%. The 2006 inversion of the yield curve was a real yield move. Bond market inflation expectations barely moved. Inversion did not predict the 2008 crisis. It just showed that foreign central banks have to buy US bonds.

US inflation - it was a different world back then

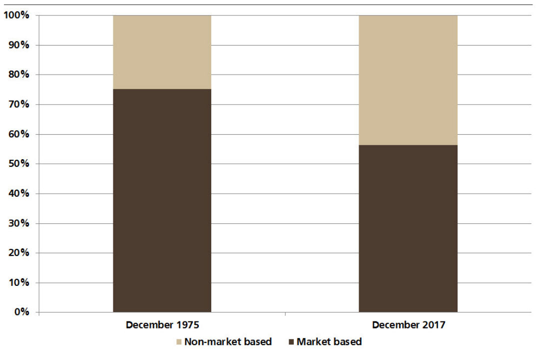
US Consumer Price Inflation, % yoy



Source: Haver

Inflation is a lot less market relevant these days

Market and "non-market" price weights in the US CPI



Source: Bureau of Labor Statistics, UBS calculations. "Non-market" prices are those which are driven by non-cyclical forces over the short term or are not fully representative of the sector. They include rent, home ownership/OER, public transport, medical care, and (2017 only) education. Quality adjustment methods (hedonic adjustment) will add further non-market distortions to the 2017 data, but not to the 1975 data - these are not included in this chart.

Regulation of the financial sector also forces some investors to buy bonds. As regulation has increased, so real yields have been forced lower. Pension regulation and not the threat of recession explains the UK's inverted bond yield curve in the late 1990s.

This time it's sort of different

There was a logic to inverted yield curves predicting recessions. If bonds were driven by inflation and inflation was driven by the boom and bust cycle, an inverted yield curve might signal a recession. In a low inflation world with inflation driven by non-market forces, that logic does not hold.

This does not mean that there is no information in the yield curve. Short term interest rates should move with central bank policy. if central banks are trying to boost or slow an economy, the short end of the yield curve will show that. Investors may also prefer not to invest in equities if they expect lower earnings. In that case demand for bonds may rise, and yields would fall. Listed companies (equities) are a minor part of the economy, however. The economy is not the same as earnings growth.

The US Federal Reserve may worry that investors worry about the yield curve, as that might change investor behavior. The US Federal Reserve may also worry that investors believe policy rates are too high, if the yield curve is inverted. These worries are not the same as predicting recessions, of course.

Bond yields are useful economic signals. There are obviously links between a bond market and the economy. Just like every other bond market, the US yield curve may signal a recession. Just like every other bond market, the US yield curve does not have to signal a recession. Bond traders are not better than economists.

Appendix

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