STRATOS
INVESTMENT MANAGEMENT

SHOULD WE EXTEND OUR MATURITIES?

COMMENTARY

SEPTEMBER 2024

It's the onset of football season and visions of passing attacks are dancing in the heads of many a gridiron fan. While it is certainly fun to watch a quarterback throw a long bomb to an open (relatively or not) wide receiver for a long score, it is also a strategy that is fraught with peril. What if the receiver drops the ball? What if the quarterback overthrows (or underthrows) the receiver – potentially into the hands of a defender. Essentially the potential outcome is (rather) binary: complete the pass and at worse end up with a first down or don't complete the pass and lose a down with no yardage or (worst case scenario) toss an interception that gives the other team the ball or a score.

Another option for a passing attack is to use the "dink and dunk" route. Throw short(er) passes to backs, tight-ends and wide receivers using short routes to "move the chains".

Why bring up football in a market comment? We happen to think that there is a similar set of choices available to bond investors today. In fact, we have seen recommendations to lengthen maturity or duration to hold on to higher rates for longer, given that the Federal Reserve appears ready to begin an easing cycle. While lengthening maturity and/or duration can have some merit, like the long bomb in football, it doesn't come without some risks.

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Bond Investing and the Yield Curve

Bonds are viewed as low(er) risk investments because if you purchase a bond and hold it to maturity, you will earn the Yield to maturity at which the bond was purchased. That said, bond investing is not without some risks. Risks include (but aren't limited to): interest rate risk (the risk that rates change once the bond is purchased), inflation risk (the risk that the value of the bond will be eroded by inflation), liquidity risk (the risk that you might not receive full price if you have to sell the bond prior to its maturity date), credit risk (the risk that the bond issuer isn't able to timely pay interest and principal on the bonds) and reinvestment risk (the risk that interest rates fall, meaning that you will have to reinvest the cash flows at lower rates).

So how are bond rates/yields determined? Essentially, all bond rates start with something called the risk-free rate. (The risk-free rate of return is the theoretical rate of return of an investment with zero risk.) For our purposes we will refer to this as Rf. The only issuer that is viewed as a risk-free issuer is the US Treasury, with the 90-day Treasury Bill viewed as Rf. In a normal market, an investor would get a "term premium" or additional interest on the T-Bill rate to invest in a bond with a longer maturity than the 90-day T-bill. The yields on maturities from Short-term to Long-term bonds are called the "yield curve" and a "normal" yield curve is upward sloping, with higher rates for longer-dated maturities.

Bonds that are not Treasury bonds are also assessed a "credit premium" to account for the likelihood, however slight in some cases, that the issue may not be able to make timely payment on interest and principal. Bonds might also be assessed a "liquidity premium" if the issuer doesn't have many bond issues or maturity options or if you are buying a small amount. So, for example, If the 90-day T-Bill rate was 4%, the 5-Yr Treasury might have a term premium of (for example) 0.5% and an A rated corporate bond (Corp Issuer) might have a credit premium of 1% and a liquidity premium of 0.25%. This would make the 5-Yr Treasury Bond yield 4.5% and the similar maturity Corp Issuer bond 5.75%.

An investor might look at the two five-year bonds, relative to the 90-day T-Bill, and logically decide, "yes, the higher rate for the longer-term bonds are attractive enough for me to invest in either of the longer-term options." But what happens if rates change, and they need to sell the bond before maturity? We don't know what interest rates might be in the future, so we don't know what our investment risks might be. That is where duration comes in and that is why we aren't so sure that current recommendations by some to extend bond maturities in the face of falling interest rates (should the Federal Reserve do as expected and begin cutting short term rates).

The first thing to understand is that bond prices and interest rates are inversely related. In other words, as interest rates fall, bond prices rise and fall as rates rise. But by how much will the price change and will it be the same across the yield curve? Good questions and duration can help give us some answers.

The below chart shows the yield and duration for each maturity on the Treasury yield curve from 1 to 30 years as of September 3, 2024 (Source: FactSet):

	Yield	Duration
1Y	4.40	0.930
2Y	3.92	1.911
3Y	3.78	2.775
5Y	3.70	4.536
7Y	3.80	6.110
10Y	3.91	8.181
20Y	4.29	13.394
30Y	4.20	16.873

You will note two things about the above chart:

1) The yields for the longer-term treasury issues are lower than the 1-Yr note, and
2) the duration climbs the longer the maturity.

While the market sets interest rates for the yield curve, the duration is more of a mathematical calculation. It is driven by rate and time. The longer the term to maturity, the higher the duration and (all else equal) the lower the yield, the higher the duration. Looked at another way, the longest duration bond within any specific maturity is a zero-coupon bond, and its duration is (effectively) it's time to maturity.
Duration can also be looked at as a type of risk measure. Because the duration calculation tells you approximately how much a bond price should move for a 1% change in interest rates, you can also look at higher duration bonds as higher risk (the price changes more the higher the duration).

But how can we quantify the risk taken? The chart below (source: FactSet) shows us what can happen to the expected return on the bond based on a 1% move in interest rates, given each bond's duration measure. We think the results are quite interesting.

If interest rates fall, then the return on each of the bonds should be higher than the coupon (which makes sense). However, if interest rates rise, the return for each issue falls. If you are unlucky enough to own bonds due in five years or more, your return will go from positive to negative.

			Return if rates are	
	Yield	Duration	1% Up	1% Down
1Y	4.40	0.930	3.47	5.33
2Y	3.92	1.911	2.01	5.83
3Y	3.78	2.775	1.00	6.55
5Y	3.70	4.536	-0.83	8.24
7Y	3.80	6.110	-2.31	9.91
10Y	3.91	8.181	-4.27	12.09
20Y	4.29	13.394	-9.11	17.68
30Y	4.20	16.873	-12.68	21.07

This is the conundrum bond investors face today. You can purchase relatively short maturity bonds and get a higher return but face the (likely) prospect of reinvesting at lower rates, or you can extend your maturities and run the risk of losing money if interest rates at your chosen part of the yield curve rise

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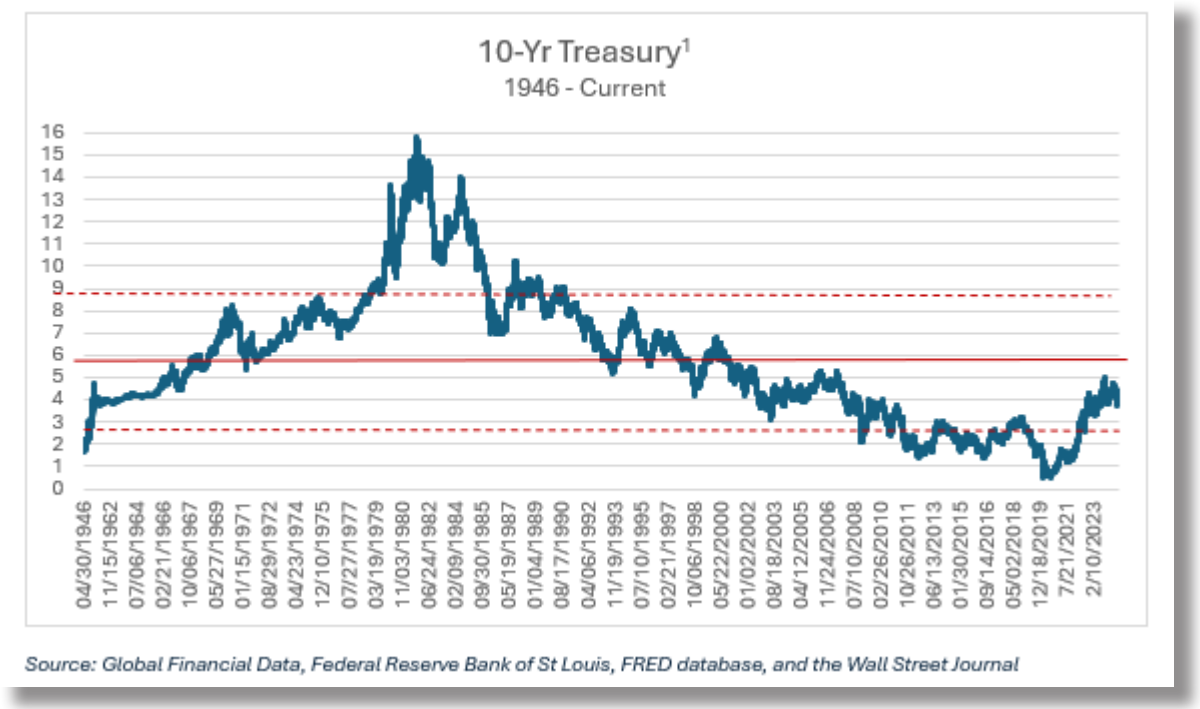
So what is an investor to do?

You can try to mitigate some of the risks by owning individual bonds rather than bond funds as you can control more of what is in your portfolio. You may also want to determine if you can (regardless of what happens to interest rates) afford to time up your money for a longer period of time. Finally, you may want to understand what "normal" is from an interest rate standpoint.

Normal

First, a "normally" sloping yield curve is one where long(er) term rates are higher than short(er) term rates. It is, therefore, upward sloping. In our view, what normal is, from an interest rate standpoint, however, is harder to pin down. Suffice it to say that "normal" interest rates at any one place on the curve is likely related to what history has shown us on a long-term basis. For help in determining that, we provide the long-term chart of the 10-year treasury bond below:



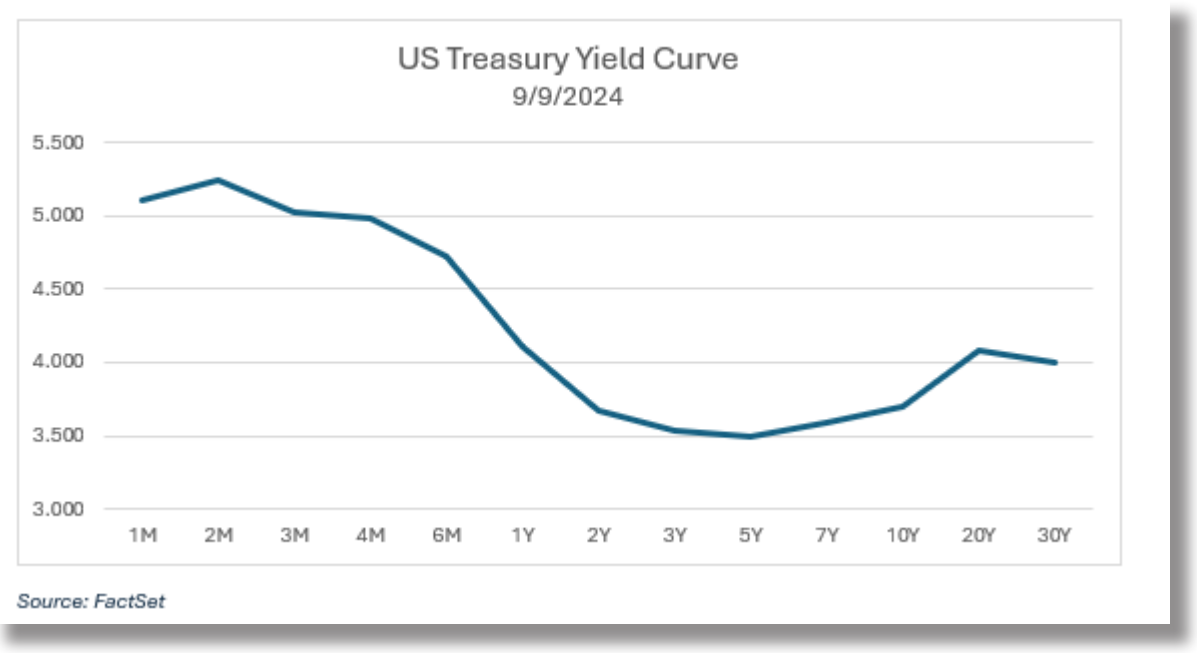
Source: Global Financial Data, Federal Reserve Bank of St Louis, FRED database, and the Wall Street Journal

The average rate for the 10-Year Treasury note (post WW II) is 5.81%. This is denoted by the solid red line in the chart above. The dashed lines on either side of the average represent one standard deviation from the mean (average), which represents 68% of all possible outcomes. We should also note that while the current 10-year is below its long-term average, it falls within the range we should consider "normal". (Conversely, you will also note that for a good portion of this century the 10-year rate was below "normal".)

The reason that I talk about average rates for the 10-year, is to give you some context so that you can look at current rates in terms of where they might go. We believe that this is particularly important when you are trying to use duration to give you an idea of what your return expectations should be. In other words, if the current 10-year Treasury is yielding 3.91%, we know that is roughly two percentage points lower than what the average rate has been over the last, nearly eighty, years. We can also see from the chart above, that while the 10-year Treasury has been on a downward trajectory since the early 1980s, that appears to have changed. Looked at from a historical yield perspective, one can begin to build a case that while there is a possibility that rates could turn lower for a time, that it is far more likely that rates will continue to trend higher. Put another way, while it is certainly possible that the 10-year could fall by 1%, that would put it at less than 3%, which is at or below the range considered to be "normal". Whereas, if rates were to rise by 1%, that would take the 10-year to 4.91%, a rate that it has been at as recently as November of 2023.

This is particularly important if you believe, as we do, that we are at the beginning stages of a secular upswing in interest rates spanning a decade or more.

Getting back to the yield curve. As we discussed earlier, a normal yield curve is one that is upward sloping. The yield curve below (from September 9, 2024) shows that the current yield curve is not normal. It is downward sloping or inverted:



Source: FactSet

Assuming that the Federal Reserve Open Market Committee (FOMC) does begin its cutting cycle, then short-term rates should start to decline. We believe that should mean that the short(er) end of the yield curve should begin also to decline. However, if we use the FOMC "dot-plot" (projection of rates from the members of the FOMC) we see that the Fed Funds rate is likely to decline to 3% sometime in 2026.

If we believe that the curve will normalize, resuming its upward slope, we believe that leaves precious little room for any further declines in longer term (more than five year) rates. If the FOMC doesn't go as far as the "dot-plot" indicates, then we may need to think in terms of rising longer-term rates on order for the curve to normalize.

What Does a Bond Investor Do?

Much like the entreaty (supposedly from the Hippocratic oath), "first, do no harm," asks doctors to consider the wellbeing of the patient when considering diagnosis and treatment, investors would also do well to keep it in mind.

In doing no harm from a bond investor standpoint, we believe that it makes sense to understand the historical probabilities of rising rates and negative bond returns. This means that, again using duration as a tool, finding the place on the yield curve where – even if rates rise – you may be able to earn a positive return. Again, from the chart above, we believe that likely means focusing on bonds with maturities of less than five years. This is because, if we are correct, that the yield curve normalizes, you should be able to at least earn your coupon and can then take advantage of better, longer-term rates once they have normalized.

For investors that invest in bond mutual funds and ETFs, understanding the duration of your fund/ETF becomes particularly important, as you don't have the benefit of simply waiting for the investment to mature to avoid principal value loss. Investing in short(er) duration funds may help minimize any potential downside as the yield curve normalizes.

Some Definitions

There are some terms used in bond investing that need to be defined to help understand the risks of investing in bonds. (Yes, bond investing has its risks.)

Coupon: This is the stated interest rate on the bond, usually stated as an annual rate. As such, the coupon multiplied by the face amount will tell you how much income is generated each year by the bond.

Yield: While similar to the Coupon, it is not the same. The Yield is the coupon payment (in dollars) divided by the price of the bond. In other words, if the coupon were 4% and the price of the bond was 98, the yield would be $40/980 or 4.08%.

Yield to Maturity: Similar to the Yield, it accounts for the added (subtracted) return if the market price of the bond differs from Par (i.e., 100). For example, if you had a 4% coupon bond due one year from today and you paid 99.5 for it, the yield would be 40/995 or 4.02%, but the Yield to Maturity would be the 4.02% plus the additional $5 received when the bond matured at par. So the yield to maturity would be ($40+$5)/995 or 4.52%.

Maturity: This is the date on which the bond will mature. Typically indicated in Month/Day/Year format, it tells you how long you will (potentially) own the bond.

Duration: This is the sensitivity of the price of a bond to the change in interest rates. In general, if interest rates rise (fall) by 1%, the price of a bond would decline (rise) by the duration. Put another way. Assuming the bond in the Yield to Maturity example above had a duration of 0.5, then if interest rates rose by 1%, the price of the bond would fall by 0.5% and if rates were to fall by 1% the price of the bond would rise by 0.5%.

Disclosure

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