



August 4, 2003

THE PERILS OF “SAFE” INVESTMENTS

Introduction

It seems natural enough in ordinary life to make routine decisions based on recent experience. If a detour slowed us down on the way to work yesterday, it is probably still there today, so we take a different route. We keep going to the same place for our morning coffee because we consistently like their coffee the best. And so it goes. Routine decisions, based on everyday experience, are reliable enough that we naturally follow our recent observations, and we usually feel good about the results.

In investing, the inclination to follow the decisions that would have given good results in the recent past can lead to disappointment. Anyone who invested heavily in the stock market around the end of 1999, after its spectacular run up and just a few months before the peak from which it has fallen so far, knows first hand the perils of investing in an asset class that has recently had strong performance.

Lost in much of the excitement of the bubble and its bursting has been the continuation of the bull market in bonds that began in the 1980s. The start of this bull run brought unusual public attention to the bond market. The mid-1980s were a period in which the bond traders, not stock analysts, not venture capitalists, and not CEOs were the glamour figures of business. They were “Masters of the Universe,” whose profiles and caricatures enlivened Tom Wolfe’s *Bonfire of the Vanities* and Michael Lewis’s *Liars’ Poker*.

Even in the real world, bonds have produced notable wealth in the past 20 years. The yield on the 10-year US Treasury note has fallen from a peak of over 14% in 1984 to a low (so far) just above 3% in June 2003. In the ‘80s and ‘90s, with bond yields high but falling, investors in fixed income securities made very strong returns. It has been a very long time since we have seen an extended period of negative returns in the bond markets.

The long bull market in bonds

It may seem odd to speak of a bull market in bonds. After all, most familiar bonds (call them “regular old bonds”) are true fixed-income instruments. Regular old bonds make a well-defined sequence of payments, which are specified at the time the bond is issued. So long as the issuer continues to make the promised interest payments, nothing in the financial markets affects the number of dollars that holders of the bond receive. When the issuer is a corporation, investors need to worry about whether the issuer will be able to continue making those payments. For this note, we narrow our focus to US Treasury securities, where the analysis is even simpler, since few investors harbor doubts about the Treasury’s ability to make the promised interest and principal payments.¹ How can there be a bull market in instruments whose future payments are as certain as those on US Treasuries?

A fixed-coupon bond represents a promise by the issuer to pay a certain, fixed amount of interest at fixed intervals (usually twice per year in the US market), and then return the investor’s principal at maturity. Let’s imagine that in the middle of this month the US Treasury issues a note with a 4% coupon, maturing August 15, 2013.² The 4% figure represents the annual interest the note pays, in two payments six months apart. An investor buying \$1000 face value of this bond can expect to receive a coupon, or interest, payment of \$20 each February 15 and August 15 (the two payments each year add to \$40, which is 4% of \$1000) until August 15, 2013. On that date, the investor would receive the final \$20 coupon, as well as the return of the \$1000 principal.

Our hypothetical Treasury note has fixed payments, but what would you pay to buy it? The answer is, it depends. What it depends on is the general level of interest rates in the market. For our hypothetical bond, what matters most is the yield on the current ten-year Treasury. At the end of July, the yield on the 10-year Treasury stood at 4.49%³. Roughly speaking, that means that investors would be willing to pay face value (par, or a price of 100, since bond prices are generally quoted as a percentage of face value) for a 10-year Treasury note with a coupon of 4.49%. That is, \$1000 would be a fair price for a bond that paid \$22.45 every six months for ten years, and then returned the \$1000. So the fair price for our 4% bond, which pays \$2.45 less each six months, must be lower. In fact, based on a yield of 4.49%, the fair price for our bond would be about 96.09, or \$960.90 per \$1000 face amount.⁴

The main thing to know about the prices of regular old bonds is that they move in the opposite direction from yields. When interest rates go down, bond prices go up, and *vice versa*. Other things being equal, prices of longer-dated bonds are more

¹ The circumstances in which Uncle Sam would lose the ability to print enough money to pay the obligations with fiat currency are pretty gruesome. A Treasury default would probably accompany other problems that were much worse.

² Treasury bonds and notes are the same, though we usually call them notes if they are issued with maturities of ten years or less, and bonds if they are longer.

³ This and all Treasury yield data are from US Department of the Treasury, Daily Treasury Yield Curve rates, available daily at <http://www.treas.gov/offices/domestic-finance/debt-management/interest-rate/yield.html>

⁴ Estimate by author for illustrative purposes. Bond math is an arcane world all its own, but it’s also rather standardized. If you’re really interested, bond handbooks abound.

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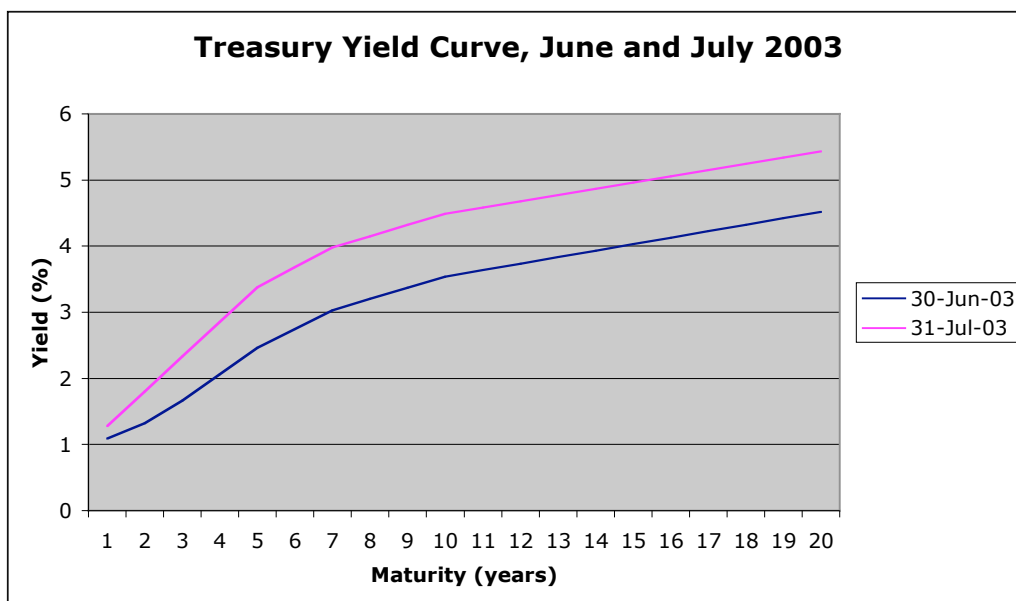
sensitive to changes in rates than those of shorter bonds.⁵ Because their prices can go up and down, even regular old Treasury bonds have risk.

Imagine a 30-year bond issued at par in August 1983 with a coupon of 11-1/2%⁶. Today that bond would have 10 years remaining to maturity, and so as of July 31 it should yield – you guessed it – 4.49%. But this bond would still pay \$57.50 every six months per \$1000 face value. The value of this bond at that yield? 155.98, or \$1559.80 per \$1000 face value. That is the essence of the long bull market in bonds.

The risk in riskless bonds

Bonds are great investments. They provide income. Regular old Treasuries have predictable cash flows. In some ways, Treasuries can provide a safe haven for your money, since you know how many dollars you will receive from them, and when. Because of these features, Treasuries particularly shine when riskier investments are suffering and investors run for safety. But whatever their virtues, bonds, even Treasuries, are *not* riskless. Their safety has limits. They fluctuate in price as interest rates move. In twenty years of generally falling rates, they have produced, for bonds, spectacular returns. But bond prices can fall when interest rates rise.

The month of July saw a sharp increase in Treasury yields at all maturities. The figure below shows the Treasury yield curve at the end of June 2003 and July 2003.



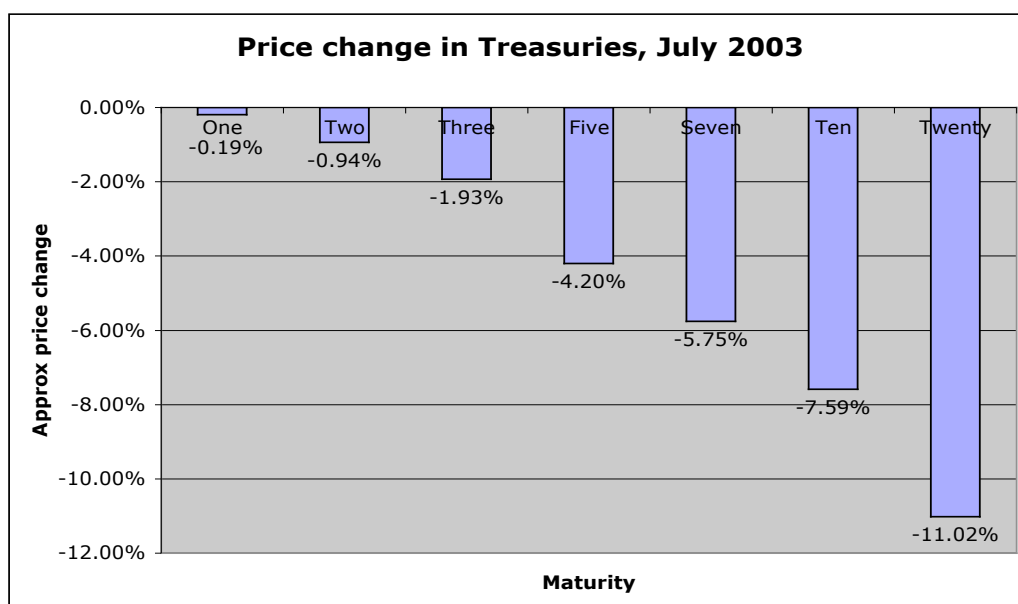
Source: US Department of the Treasury, Daily Treasury Yield Curve Rates

⁵ Another technical, but extremely useful bond concept is *duration*, which makes this relationship more precise. At the margin, a bond with a duration of 4 years is twice as sensitive to changes in yield as a bond with a duration of 2 years. The term *duration*, appropriately, has a time connotation, but while it is related to maturity, it is not the same thing. Bonds with longer maturities usually have longer durations.

⁶ According to data from FRED, the Federal Reserve Economic Database, the market yield on a 10-year Treasury averaged 11.38% for July 1983 and 11.85% for August 1983.

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Each curve simply plots indicative yields on US Treasuries for maturities ranging from one to 20 years. The lower, blue curve shows these yields at June 30, 2003, and the upper, pink curve shows them at July 31, 2003. The increase in yields was unusually steep, but affords a good opportunity to look at the risk in bonds. The next graph shows theoretical estimates of the price change in Treasury securities of various maturities for the month of July.



Source: Author estimates based on Treasury data presented in previous figure

Longer-dated bonds suffered significantly greater losses than shorter-dated bonds during the month. This was due to the combination of two factors. First, longer-dated bonds are generally more sensitive to changes in rates. In addition, as the first figure shows, yields on longer bonds rose more sharply.

July's rise in bond yields was unusual in its speed and extent, but it gives us a good reminder of the risks in bonds. Explanations for July's action vary, but they generally touch on four points. One factor may have been comments by the Federal Reserve Board and some Fed governors that have led market participants to believe that the Fed is unlikely to make outright purchases of long-dated Treasuries, in spite of previous hints that it might do so. Second, the Fed has abruptly stopped talking about the possibility of deflation in the US economy, which suggests to some that some renewal of inflation (or at least policy action consistent with the threat of inflation) is now more likely. This would probably result in rising interest rates. Third, some economic data may be starting to point in a more encouraging direction, which generally means that both inflation and interest rates could rise. Finally, the size of projected federal budget deficits suggests to some observers that rates may rise further.

What should an investor do?

For investors with portfolios allocated between stocks and bonds, the month's bond performance offset the modest gain in stocks – the S&P 500 returned +1.76% during the month. For a hypothetical 60/40 portfolio, whose stock portion resembles the S&P 500 and whose bond portion has interest rate exposure similar to that of a five-year note, the total return would likely have been a loss of something under 1%. Portfolios with greater allocations to bonds could have lost more. The specific results depended heavily on the maturity structure of the investor's bond holdings.

Any investor should sit up and take notice of such a sharp increase in interest rates as that of the past several weeks. But how should investors respond? The first, most obvious point is that bonds are more attractive with the 10-year yield at nearly 4-1/2% than at a yield of just over 3%, and for two reasons. Not only is the yield higher, but the recent rise in rates makes the possibilities for future interest rate moves more symmetric – rates could continue to rise, but now they also have more room to fall. This second point is of particular importance to investors with significant portfolio allocations to equities. Bonds, and especially Treasuries, often provide investors a portfolio cushion. This can be particularly important if equities fall sharply. When that occurs, there is often, although by no means always, a “flight to quality,” in which investors shifting away from risky assets rush to the relative safety of Treasuries. The higher Treasury yields are, the more room there is for a flight to quality (into Treasuries) to push yields down, providing bond returns that soften the fall in equities.

Conclusion

After more than three years of harsh stock market conditions and solid bond returns, many investors may have shifted their portfolios substantially away from stocks and into bonds. These investors may have had a rude surprise during July, when the stock market advanced modestly, but bond yields increased sharply, resulting in losses in many bond portfolios. These investors may have made the classic investing mistake of chasing performance – basing their current decisions on the recent performance of the market. Investors who over-allocated to bonds in that process may wish to take their lumps and shift back to a more normal allocation, but for most investors, the recent rise in rates makes bonds more attractive, not less. Most important, for those investors holding bonds to offset the risks in equities, this increase in rates gives the Treasury market important room to absorb a flight to quality that could occur in the event of a sharp, downward movement in equities.

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Source for bond data: US Treasury yields from US Department of the Treasury, Daily Treasury Yield Curve rates. S&P 500 return from BARRA. Other figures estimated by author.

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