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ASSET MANAGEMENT

A Generational Selling Opportunity for the U.S. Long Bond

BY JIM O'SHAUGHNESSY: AUGUST 6, 2013

"IT AIN'T SO MUCH WHAT PEOPLE KNOW THAT HURTS THEM AS WHAT THEY KNOW THAT AIN'T SO."

ARTEMUS WARD

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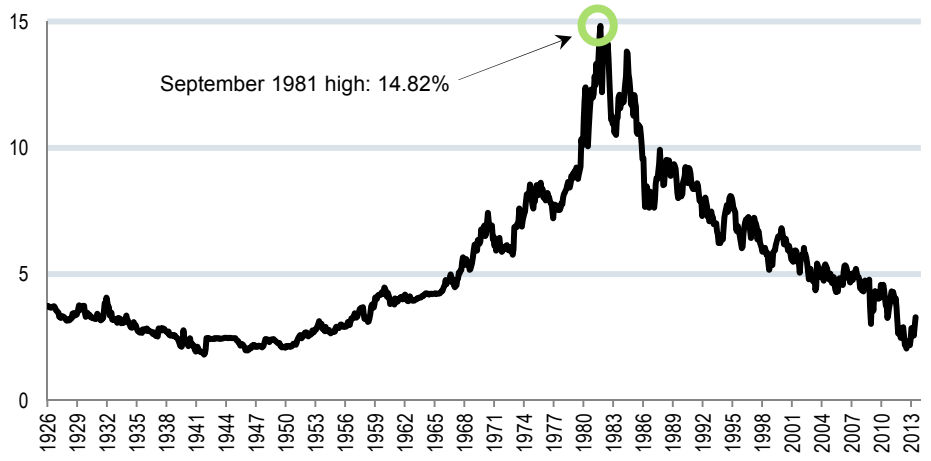
In the second edition of his book *Irrational Exuberance*, Robert Shiller discusses the nature of a speculative bubble, calling it "a situation in which news of price increases spurs investor enthusiasm, which spreads by psychological contagion from person to person, in the process amplifying stories that might justify the price increase." This attracts "a larger and larger class of investors, who, despite doubts about the real value of the investment, are drawn to it partly through envy of others' successes and partly through a gambler's excitement."

To me, this sounds exactly like what has happened to the bond market over the last decade. Take a look at the performance of the S&P 500 versus the 20-year U.S. Treasury Bond since January 1, 2000. $100,000 invested in the S&P 500 had a real (inflation-adjusted) return of 0.14 percent per year, turning the original $100,000 into just $101,970. Thirteen years to make a lousy two thousand bucks! An investor who instead invested in the 20-year U.S. Treasury Bond would have enjoyed a real annual return of 5.41 percent, turning their initial $100,000 into $203,750.

Because investors tend to extrapolate what their general experience in markets has been recently well into the future, it's easy to see why investors are having a long-term love affair with bonds—they seem much less risky and less volatile than stocks, will be paid off in full when they expire, and are backed by the full faith and credit of the United States Government.

Yet, if you look at Figure 1, you'll see that for middle-aged investors, the yield on the 20-year Treasury has been in near freefall for the last 32 years. In September 1981 it hit a high of 14.82 percent and has pretty much declined steadily from there. To put this in perspective, I was 21 years old in 1981, so, for all of my adult life I have lived in a world of declining interest rates. It's these very long-term trends

Figure 1: Yield (%) on the 20-year Treasury Bond (January 1, 1926 – June 30, 2013)



Source: Morningstar EnCorr, Ibbotson Associates

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that tend to become ingrained in our brain and determine how we think about certain investments.

Even so, we believe that this is a generational selling opportunity for investors in the 20-year Treasury and other long duration bonds. Let's see why.

The Long, Long Term

We like to look at very long-term return data, since anomalies are few and far between. We have seen that when something very unusual happens in the market, it generally signals the end of a very long-term trend. In February 2009, the 20-year U.S. Treasury did something it had *never* done since 1900—its 40-year inflation-adjusted return beat an investment in the S&P 500. Not by much, just a 9.44 percent cumulative advantage over the S&P 500 for the 40 years ending February 2009 and a 16.04 percent cumulative advantage for the 40 years ending in March 2009. In comparison, during those same 40-year periods ending in February 2009 and March 2009, the S&P 500 returned a real average annual return of 3.84 percent and a 351.75 percent cumulative return in the February 2009 period and 3.98 percent real average annual return and a 377.13 percent cumulative return in the March 2009 period. Over the same 40-year period, the 20-year Treasury returned a real average annual return of 3.90 percent and a 351.75 percent cumulative return for the February period and a 4.07 real average annual and a 393.17 percent cumulative return over the March period. This anomaly was coupled with another event that had not occurred since 1942—the S&P 500 returned less than 4 percent a year for the previous 40 years.

However, looking forward from 1942 to the next five-, ten-, and 20-year periods, we see explosive growth for stocks. During the next 20 years, the S&P 500 compounded at a real rate of 10.54 percent, turning $100,000 into $742,219, whereas an investor in the 20-year Treasury saw a *loss* of 1.82 percent, turning the $100,000 into $69,213! It was this, as well as other "once in a lifetime" events that prompted me to write a commentary in March of 2009, telling investors that they had a generational buying opportunity for stocks. We believe strongly in reversion to the mean in all financial data series. Be it stocks, bonds, currencies, or commodities, times of long-term outstanding performance are followed by times of subpar performance as the instruments revert to their long-term means.

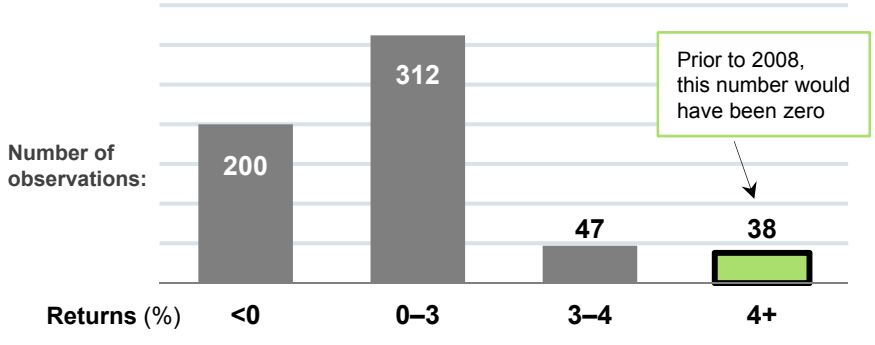
So far, that March 2009 forecast is working quite well—since I published the commentary $100,000 invested in the S&P 500 grew to $218,618, a real average annual return of 19.78 percent, or 118.62 percent cumulative gain. The same $100,000 invested in the 20-year Treasury grew to just $118,050, an average annual real gain of 3.90 percent and an 18.05 percent cumulative gain.

Normally, I would have also written a commentary warning investors in long duration bonds that they had best sell out fast for many of the same reasons I was recommending that they buy stocks. But Quantitative Easing was in full swing and since it was a policy that had never been conducted before, I thought it prudent to wait until it looked like the Fed was getting ready to wind down their program before writing this commentary. I'm glad I did, as several other unusual things have happened since then that have not occurred since 1900.

An Extraordinary Anomaly

Glance at Figure 2, which is a histogram showing the number of times the 20-year Treasury achieved various levels of annualized real returns for all rolling 40-year periods between 1900 and June 2013. Had I written this commentary before December 2008, there would *be zero times* that bonds performed in the plus four percent returns bucket. Between 1900 and December 2008, the 20-year Treasury had *never* enjoyed an annualized real return over 4 percent. Now, there are 38 times in the rolling 40-year period where they have earned that return. Their best 40-year return occurred on April 30, 2013, where they earned an annualized 4.49 percent over the previous 40 years. That is a cumula-

Fig. 2: Annualized Real Returns for All Rolling 40-year Periods, 20-year Treasury
(January 1, 1900 – June 30, 2013) Source: Morningstar EnCorr, Ibbotson Associates, OSAM Calculations

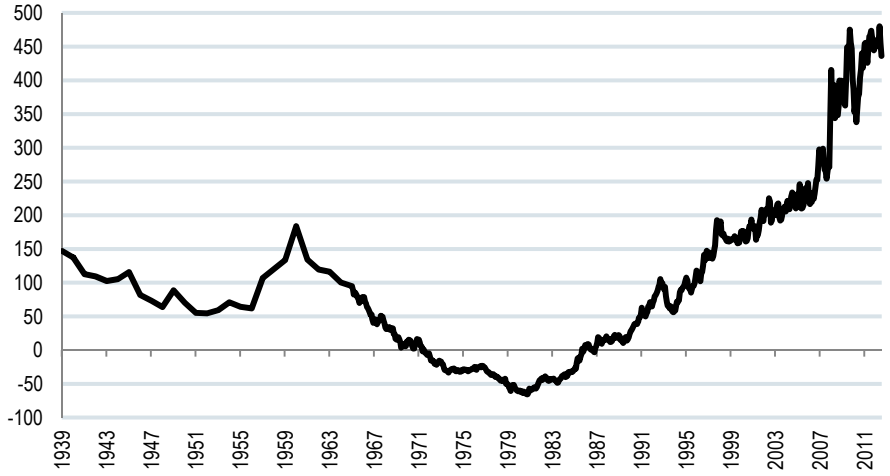


tive real return of 480 percent, turning $100,000 invested 40 years prior into $580,000.

The problem is, when you look at all rolling 40-year real returns between 1900 and June 2013, you see that, on average, the 20-year Treasury fails to even double your money—the average cumulative real gain over all rolling 40-year periods is a mere 94 percent. That means that the 480 percent cumulative real return was 3½ Standard Deviations above the long-term average for the bond. This indicates that, over the next 40 years, we can expect bonds to experience a tremendous amount of mean reversion. Even if we optimistically assume that reversion will be slow rather than fast, even a modest reversion to the mean could be devastating to investors in long duration bonds. Look again at the histogram in Figure 2 and note that there were *200 rolling 40-year periods where investors lost money over the 40-year period!* That accounts for 31 percent of all rolling observations.

Can you imagine that anyone would ever invest in the stock market if it lost money over 40 year holding periods? Indeed, the worst result for 20-year Treasury started on December 31, 1940 and did not end until September 1981, achieving a portfolio-crushing loss of 67.2 percent and turning $100,000 invested 40 years earlier into $32,800! Remember that between 1900 and June 2013, stocks have *never* lost money over all rolling 20-year periods, much less 40 years! As you extend the holding period on stocks and bonds, bonds actually begin to look much riskier than stocks, something I will touch on later in this commentary. Figure 3 details the

Fig. 3: Rolling Real Cumulative 40-year Returns for the 20-Year U.S. Treasury (%)
(January 1, 1900 – June 30, 2013) Source: Morningstar EnCorr, Ibbotson Associates



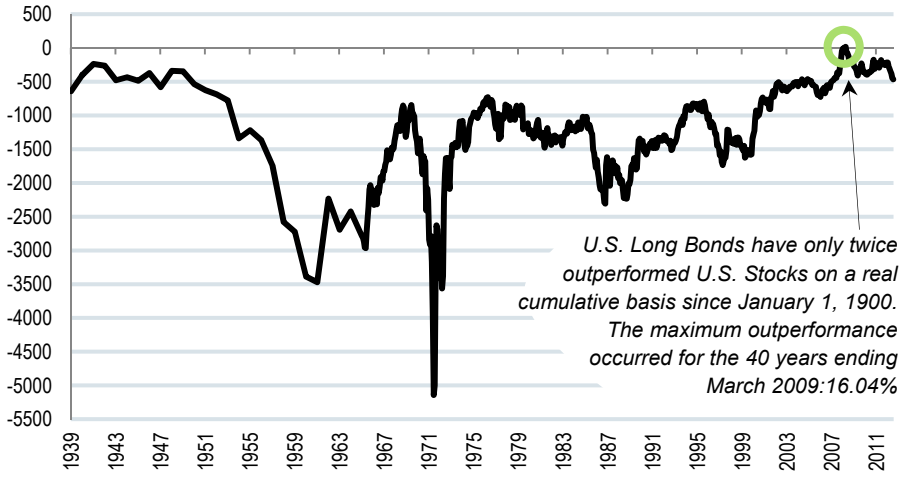
rolling cumulative returns for the 40-year holding periods between Jan.1, 1900 and June 30, 2013. Figure 4 shows the rolling real cumulative over- or underperformance of the U.S. Long Bond minus the S&P 500. Note, out of all 597 rolling 40-year periods, the Long Bond has only beaten the S&P 500 twice—in February and March of 2009.

Worse yet, the 20-year Treasury had nearly a 41-year maximum decline of 67.2 percent between December 1940 and September 1981. Had you been the unlucky soul who held the bond over this period, your initial $100,000 would have been worth just $32,800 four decades later. Do you now see why, over long periods of time, bonds can be *much* riskier than stocks?

Shorter Time Periods

One immediate reaction to the information about the performance of the 20-year Treasury over all rolling 40-year periods might be "So what? My investment horizon is not close to 40 years, so this does not matter to me." Yet, the news gets even worse

Fig. 4: Bond-Stock Real Cumulative Over- and Underperformance (%)
All Rolling 40-Year Periods (January 1, 1900 – June 30, 2013) Source: Morningstar EnCorr, Ibbotson Assoc.



when you look at all rolling 20-year periods. In all rolling 20-year periods between 1900 and June 2013, real returns are negative 48 percent of the time! If you are considering buying a 20-year Treasury—even under normal conditions—your odds of making any money at all are basically 50/50. Under the *current* conditions, with bonds earning a historically anomalous period of overperformance, I would speculate that your odds of making any money in bonds are *zero*, and very high that you will *lose* money—perhaps a lot of money.

When we look at individual 20-year holding periods for the 20-year Treasury, the worst was a loss of 53.16 percent, turning $100,000 into $46,840. By the way, the best 20-year period for the 20-year Treasury occurred on September 2001, with a real average annual return of 9.38 percent or a cumulative return of 501.23 percent. That peak return was 5½ standard deviations above the average cumulative return of 33 percent for all rolling 20-year periods since 1900. Figure 5 shows that, since September 2001, all subsequent returns have been lower. Figure 6 shows the rolling real cumulative over- or underperformance of the U.S. Long Bond minus the S&P 500. March 2009 was the first time in all rolling 20-year periods that the Long Bond had a cumulative advantage of more than 100 percent over the S&P 500.

For all rolling ten-year periods between 1900 and June 2013, the Long Bond had negative returns 41 percent of the time. The worst ten-year loss occurred for the ten years ending September 1981, with a cumulative loss of 48.90 percent, turning $100,000 into $51,100. The best ten-year return—not much of surprise, given that bond yields peaked in 1981—occurred in the ten years ending September 1991, where the bond earned an average annual real 10.27 percent or 209 percent cumulative real return, some 4½ standard deviations above its average cumulative ten-year return of 9.98 percent.

Fig. 5: Rolling real Cumulative 20-year Returns for the 20-Year U.S. Treasury (%)
(January 1, 1900 – June 30, 2013) Source: Morningstar EnCorr, Ibbotson Associates

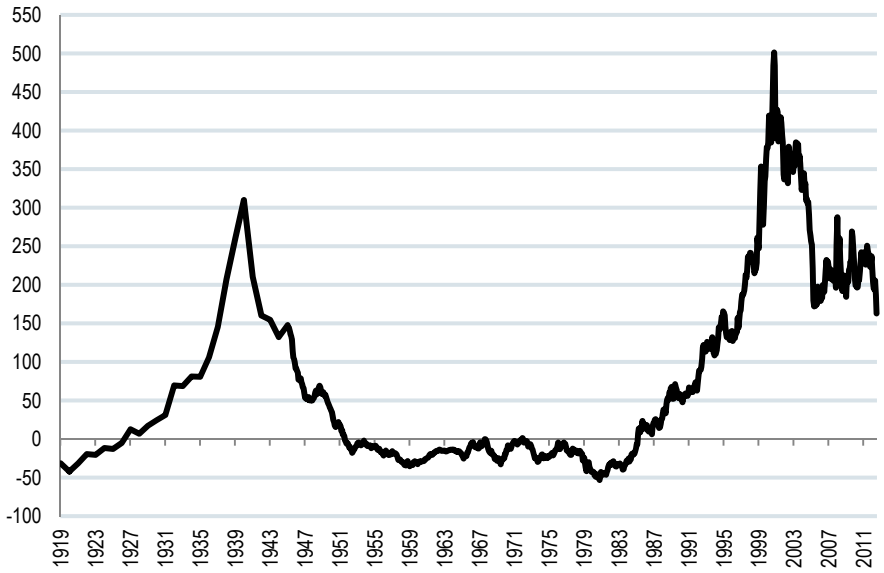


Figure 6: Bond-Stock Real Cumulative Over- and Underperformance (%)
All Rolling 20-Year Periods (January 1, 1900 – June 30, 2013)
Source: Morningstar EnCorr, Ibbotson Associates, S&P

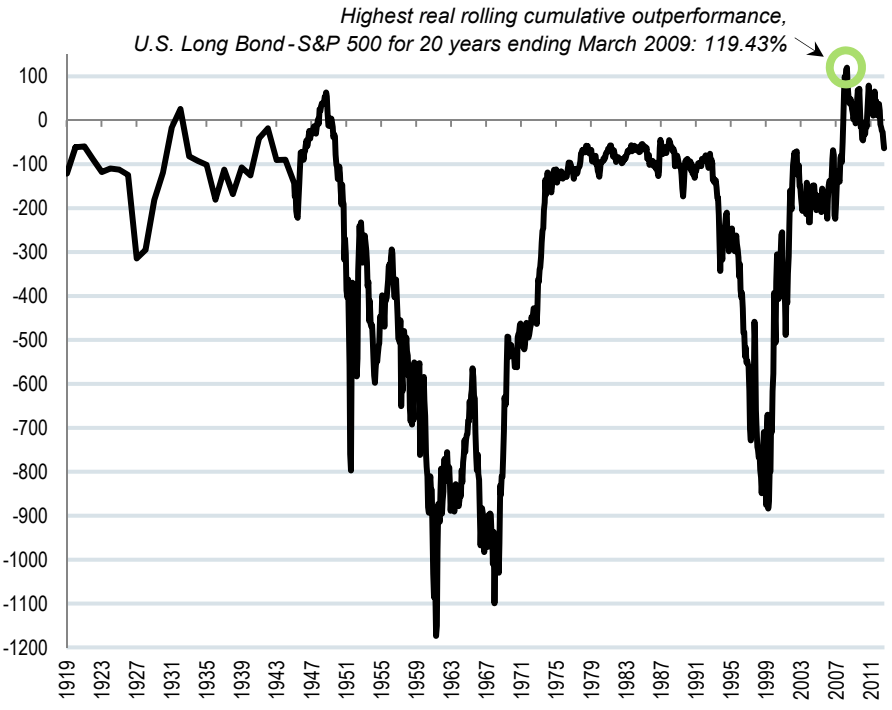


Fig. 7: Rolling real Cumulative 10-year Returns for the 20-Year U.S. Treasury (%)
(January 1, 1900 – June 30, 2013) Source: Morningstar EnCorr, Ibbotson Associates

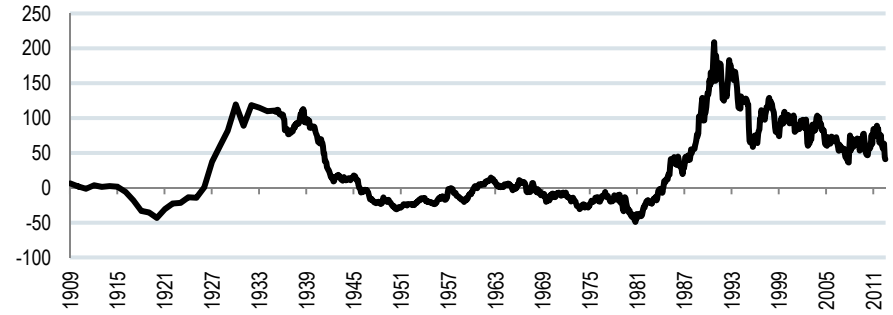


Figure 7 shows all rolling ten-year periods. Figure 8 shows the rolling real cumulative over- or underperformance of the U.S. Long Bond minus the S&P 500. March 2009 was the first time since 1939 that the Long Bond had a cumulative advantage of more than 100 percent over the S&P 500.

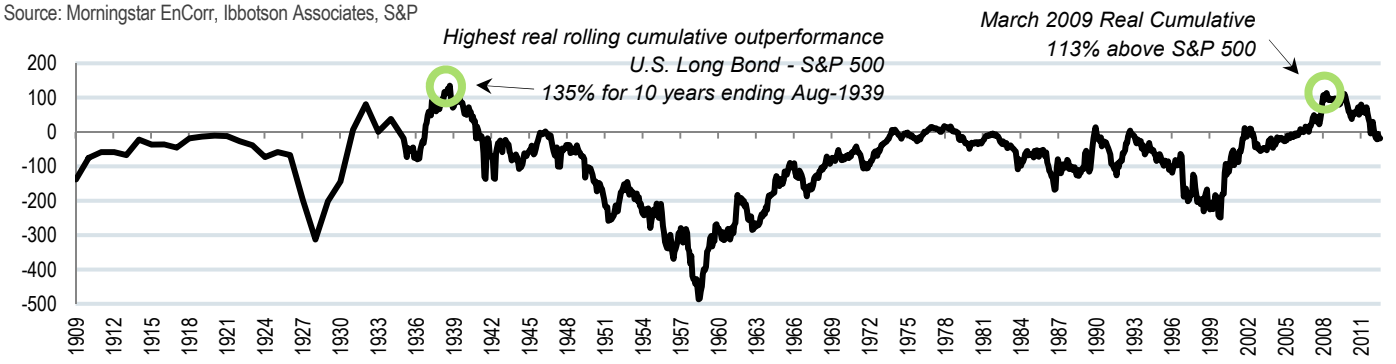
Rough Sledding Ahead

As I write this, the 20-year Treasury has a yield of 3.42 percent, well below the long-term average of 5.23 percent. But I think it is fair to look at the average yield since August 1971 when the United States closed the gold window, making the U.S. dollar essentially a fiat currency. Since August 1971, the average yield on the 20-year Treasury has been 7.27 percent, meaning the bond's yield has to more than double to revert to its average since the closing of the gold window. It also happens to be 83 basis points below the 4.25 percent annual rate of inflation since 1971. Thus, under current conditions, I believe an investor buying the 20-year bond has virtually no chance to make any money, even if the bond was held to maturity. Indeed, I expect that anyone buying a 20-year Treasury today will experience extreme volatility over the coming years, and even if they withstand the emotional pull to sell and instead hold it to maturity, their real after-inflation return will be negative. If you must have bonds in your portfolio—and most investors desire them—I highly recommend selling out of any bonds with durations of more than five years. Right now, the U.S. 5-year yields 1.317 percent, hardly attractive, but much more immune to interest rate risk than the 20-year Treasury. Should the Long Bond start reverting to the average 7.27 percent yield, investors who currently hold Long Bonds—which currently yield 3.42 percent—will see their bond holdings (which they might believe is the *safe* portion of their portfolio) ravished with steep losses, and my guess is that they will do what investors always do when faced with large losses—sell. This is particularly important for investors in bond mutual funds to pay attention to, since the continual selling of the funds by their fellow shareholders will lead to steeper losses for those who decide to stay in. It will be a truly vicious spiral, and will likely cause severe dislocations in investors' portfolios.

The Easiest Crisis to Avert

Unlike the recent financial crisis, I believe this bond crisis is easy to see coming. Financial instruments always revert to their long-term average returns, as all the included charts illustrate. I believe that this will be a generational decline, and that in my lifetime I will never again see returns to the Long Bond as high as those achieved for the 10-, 20-, and 40-years through March 2009. Now let's look at Table 1 (see following page), which lists the number of times that the Long Bond has outperformed the S&P 500 since 1900. Once the holding period gets beyond 20 years,

Figure 8: Bond-Stock Real Cumulative Over- and Underperformance, All Rolling 10-Year Periods (%) (January 1, 1900 – June 30, 2013)
Source: Morningstar EnCorr, Ibbotson Associates, S&P



Past performance is no guarantee of future results. Please see important information at the end of this presentation.

Table 1: Long Bond Outperformance of U.S. Equities for Various Rolling Periods (January 1, 1900 – June 30, 2013)

For all rolling:	Number of Times Outperforms	Total Number Observations	Percent of the Time	Maximum Real Cumulative Advantage	*For Rolling Period Ending:*
10-year periods	165	957	17.24%	135%	*Aug-39*
20-year periods	54	837	6.45%	119%	*Mar-09*
30-year periods	6	717	0.84%	162%	*Sep-11*
40-year periods	2	597	0.34%	16%	*Mar-09*

Source: Morningstar EnCorr, Ibbotson Associates, OSAM Calculations

we see that the Long Bond did better than U.S. Equities less than one percent of the time, all stemming from the success of the Fed's Quantitative Easing program to suppress long-term yields. As the economy improves and the Fed ceases its activities, the normal pricing of long-term debt will substantially increase.

The long-term effect of the end of this generational run for the Long Bond will have serious effects for all investors, be they individuals or institutions. Given this information, both individual and institutional investors should seriously rethink the bond portion of their portfolios and dramatically reduce bond maturity durations before it is too late. All of the data suggests that the crisis in long bonds is coming; all that remains is for investors to act on that information in order to avert a significant decline in their portfolio's value.

Past performance is no guarantee of future results. Please see important information below.

Bonds are subject to interest rate risks. Bond prices generally fall when interest rates rise. High Yield bonds are speculative non-investment grade bonds that have higher risk of default or other adverse credit events which are appropriate for high risk investors only.

Data Sources: For the period 1900–1925 we use the annual data provided by the Dimson-Marsh-Staunton Global Returns Data. For the period 1926–2013 we use the monthly Ibbotson Data from Stocks, Bonds, Bills, and Inflation dataset. Both Sourced through Morningstar EnCorr Analyzer.

Please note investors cannot invest directly in an index. The S&P 500 Index includes a representative sample of 500 leading companies in leading industries of the U.S. economy. Although the S&P 500 Index focuses on the large-cap segment of the market, with over 80% coverage of U.S. equities, it is generally considered a proxy for the total market.