



Bonds for the Long Run? Not Quite Yet

By Robert Huebscher

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“Most investors expect their stock holdings to outpace their bonds over any reasonably long span of time,” writes Rob Arnott in a soon-to-be-published paper, *Bonds: Why Bother?* Not so, Arnott concludes — there are “many misconceptions in these core views of modern finance.”

We disagree and find little support for the notion that Treasury bonds will outpace stocks, at least over the next 40 years. To the contrary, our review of the data suggests exactly the opposite.

In a second aspect of his paper, Arnott argues that fundamental weighting can be successfully applied to bond indexing. We contend that fixed income investors face problems more important than the construction of index funds.

His paper, which will appear later this month in the [Journal of Indexes](#), also contains an interesting review of equity versus bond performance over the last 200 years and of the diversification value of bonds.

Bonds for long run?

Arnott’s doubts equity superiority in large part because he found that over the 40-year period ending in February, Treasury bonds did in fact outperform stocks. Arnott shared his data with us, and we confirmed that the 40-year return on stocks was 8.57%, versus 8.62% for bonds, for this period. Stocks similarly underperformed bonds (8.70% versus 8.79%) for the period that ended in March 2009.

But, starting in January 1926, these were the only two 40-year spans where the anomaly existed. For all other 40-year spans, stocks beat bonds.

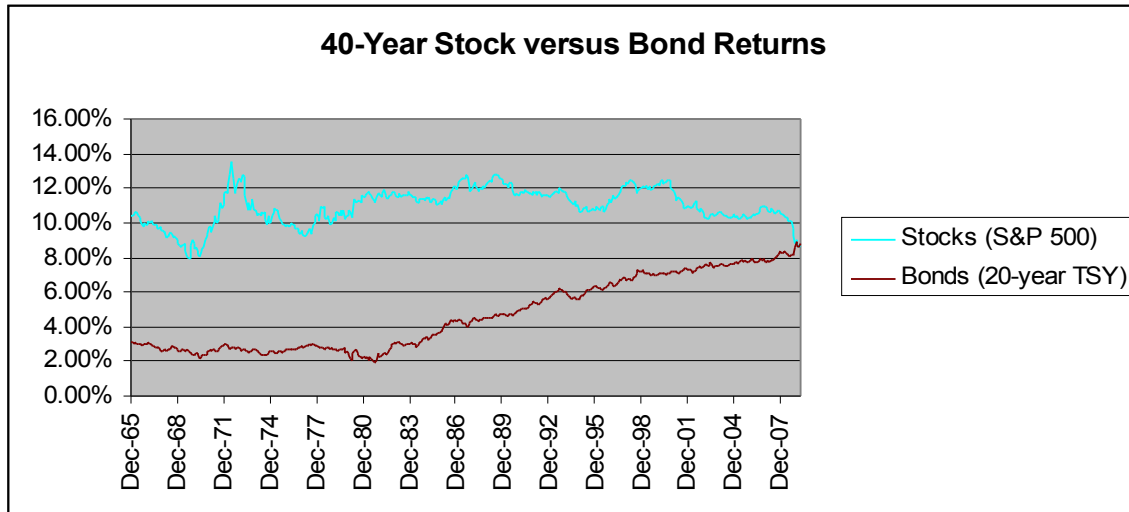
Arnott compared returns on the S&P 500 (including dividends) to returns on a constant 20-year maturity Treasury bond, and his results are shown in the graph below. He used monthly return data, obtained from Ibbotson, and calculated the geometric mean over successive 40-year intervals, annualizing the results.

Equity returns have been surprisingly stable, averaging a healthy 10.95% over this period and staying mostly within a band of approximately 9% to 13%.

The disappearance of the equity risk premium is due almost entirely to the remarkable increase in bond returns. Until 1980, bonds returned a stodgy 2%-4%, but since then



bond performance has marched steadily upwards, returning a remarkable 8.79% over the 40-year period ending in March.



As the economist Herb Stein famously said, “if something can’t go on forever, it won’t.” Such is the case with Treasury bond performance. The yield to maturity on 20-year Treasury bonds is now approximately 3.30% and 30-year bonds yield 3.75%. The market’s forecast for the future is vastly different from what it has been the last 40 years.

If Treasury yields remain at today’s levels, we are past the peak in their trailing 40-year performance. More likely, government deficits and inflation will force yields up, making the future even bleaker for Treasury bond performance. There is little to no chance of a significant rally from today’s depressed yields. This is a classic case of past returns’ inadequacy for predicting future results.

In baseball, position players are expected to out-hit pitchers, as has historically been the case. The idea of Treasury bond yields surpassing equity yields is like pitchers suddenly hitting spectacularly above historical norms, to the extent that their cumulative batting averages nudged above those of position players. A long-term bet on Treasury bonds (relative to equities) is about as wise as wagering that major league pitchers will collectively bat .300 over the next several decades.

But a bet on other fixed income sectors would make more sense. Corporate and municipal bonds now trade at historically wide spreads and arguably have the potential to deliver equity-like returns.

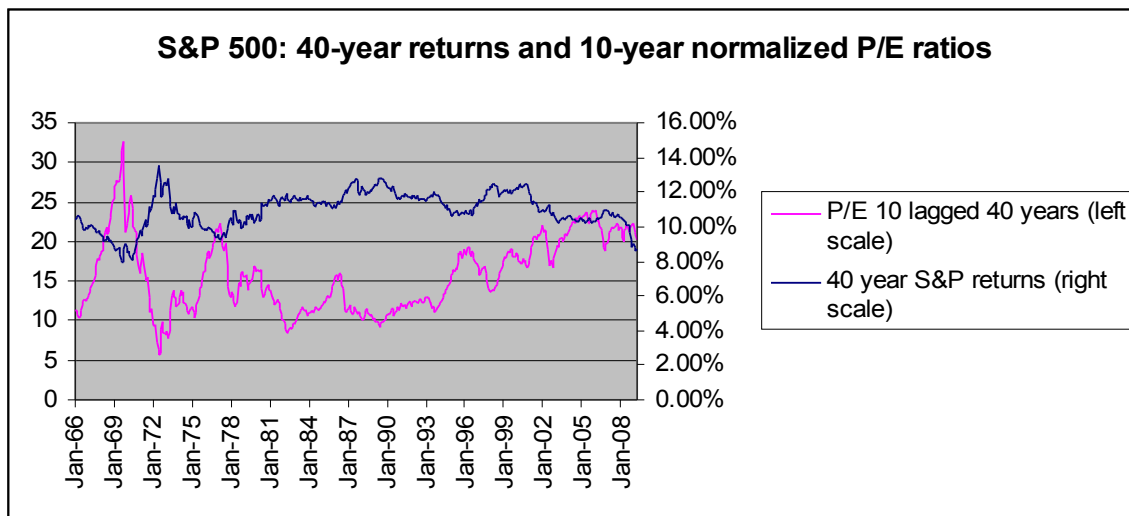


Timing is everything

[Vitaliy Katsenelson](#), [John Mauldin](#) and others have argued that long-term equity performance depends largely on one's starting point in time – specifically, on “normalized” price-to-earnings (P/E) ratios.

Normalized P/E ratios were originally introduced by Graham and Dodd in the 1930s, and were subsequently analyzed by the Yale economist Robert Shiller. Rather than using current earnings as the denominator in the P/E ratio, normalized P/E ratios use an average of prior years' earnings. Shiller's work shows that a 10-year average, which smoothes earnings over the course of a full business cycle, has the greatest predictive value.

Arnott's data provides a convenient way to illustrate the predictive value of normalized P/E ratios. The chart below plots 40-year equity performance against the 10-year normalized P/E ratio at the beginning of the investment (i.e., the P/E ratios are lagged by 40 years so, for example, the 40-year performance as of January 2008 corresponds to the P/E ratio as of January 1968.)



A strong relationship is apparent. Investors in January 1929, when normalized P/E ratios peaked at over 30, would have been well-advised to avoid the equity markets, as subsequent 40-year performance reached its lowest level over the time period shown. Several years later, in the depths of the Depression, P/E ratios reached their lowest point – nearly 5 – at subsequent 40-year performance peaked at nearly 14%.

Investing when P/E ratios are below 15 – ideally below 10 – yields 40-year performance of 12% or more. That is modestly good news for today's investors. According to Shiller's [web site](#), the normalized P/E ratio as of March 2009 was 13.1.



The equity risk premium

Equity investors expect to be compensated for the additional risk they bear over periods as long as 40 years, thus earning what is called the “equity risk premium.” Arnott claims – and we agree – that the “correct” risk premium is about 2.5%, despite his claim that many believe it is as high as 5%.

Interestingly, Arnott’s data shows the average premium was 6.27%, using his trailing 40-year monthly returns. An entirely different picture emerges, however, when the data are examined over shorter time intervals:

Time Interval	Equity Risk Premium (S&P return minus 20-year TSY return)
40 years	6.27%
30 years	6.05%
20 years	5.12%
10 years	3.67%
1 year	2.57%

Drilling down to 1-year returns gives almost exactly the 2.5% premium Arnott cites.

Our analysis is admittedly crude, and Arnott’s data makes some imperfect assumptions – using 20-year Treasury bonds as the risk-free rate, for example. More appropriately, the risk-free rate should be represented by T-bills or by stripped-coupon Treasury bonds matching the time period measured (e.g., 20-year stripped coupon bonds when measuring 20-year equity returns).

Data imperfections notwithstanding, are long-term investors, with 40-year time horizons, justified in expecting the generous 6.27% premium, or is a more conservative 2.57% premium realistic?

Part of the answer lies in using 40-year averages over an 82-year period (from 1926 to 2008), which over-weights the time periods in the middle, and under-weights those at the ends. Those end periods include some of the worst equity performance on record – equity performed abysmally during the Great Depression and is down precipitously again today. Thus, as the time periods shrink from 40 years to one in the above table, the worst-performing decades are given progressively more weight.

Studies attempting to measure the equity risk premium can be found throughout the academic literature, and a consensus value has yet to emerge. We will not settle that debate here. Our view is consistent with Arnott’s, which is that a 2.5% premium is a



reasonable expectation, and that this incremental return, compounded annually over long periods of time, adds significantly to one's wealth.

Our only point of contention is Arnott's claim that a 5% equity risk premium is a commonplace belief – or as he puts it, a “birthright” – since we know of no evidence to support the view that this is a widespread idea.

Bond index construction

Arnott takes aim at bond index funds, warning that “conventional bond indexes will load up on the most aggressive borrowers' bonds” and will overweight those issuers with the highest outstanding debt levels. We wholeheartedly agree with this insight and have seen research at least as far back as 2004 making exactly the same point.

For most bond investors, though, this insight is the least of their concerns.

In 2008, the Barclay's AGG index outperformed 92% of actively managed taxable bond funds and, more importantly, outperformed 98% of the assets in those funds. Last year was not an anomaly. Bond indices consistently outperform an overwhelming majority of actively managed funds, year after year, across many sectors.

Bond fund performance is closely (and inversely) tied to expenses, explaining why low-cost funds, like AGG with an expense ratio of .20, are able to achieve superior performance.

We are highly skeptical that a fundamentally-weighted version of the AGG would outperform the AGG after expenses, and Arnott's data seems to validate our skepticism. His data shows that investment-grade fundamentally-weighted indices performed almost identically to the AGG.

Arnott's results for high-yield and emerging market bonds show some support for the superiority of fundamentally-weighted indices. Whether fundamentally-weighted indices in these asset classes can be translated into low-cost products that outperform existing products remains to be seen.

If there is a problem in bond investing, it is among the actively managed funds, not in the way bond indexes are constructed.

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