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# Winning vs. Not Losing

## The Preservation of Capital & Risk Adjusted Returns

By Ryan Addis, October 19, 2004



What's more important, winning or not losing? Most would argue that the two are the same thing. However, when it comes to investing, it can make quite a difference. The emphasis on winning is going for the return and seeking out gain. The emphasis on not losing is the preservation of assets. Generally, when an investor is looking for a win, they put their money in the stock market hoping to get a return on the level of at least 10%. The risk adverse investor might consider looking at an investment such as a 10-year Treasury bond that in today's market (November, 2004) yields around 4.2%. Most investors are not familiar with the inverse relation of stocks and bonds or a best, if they are; they are not familiar enough to adjust for the market value of the bonds. Most are aware that as stocks rise generally bonds fall. However, the contrast between stocks and bonds does not end there. Something to consider about bonds is that the interest rate that is paid on the face value of the bond will remain constant. Stocks on the other hand may pay dividends. Dividends are not required, they are not fixed, and they may decrease if the earnings decrease.

Ex: Let's assume we have a \$1,000.00 face value bond that is paying 4.13% interest. Today's market yield on this same bond is 4.2%. This means, to get this yield from the fixed interest rate on the face value, investors are paying \$955.00 for the \$1,000.00 bond at 4.13%. Because investors are buying at a discount, the yield (return on their investment) increases to 4.2%.

One can see that even at 4.2%, the T-bill is nowhere near as seductive as the 10% possible yield in equities. Given the choice to invest in either option, which would be the most prudent investment? To figure this out, we'll have to make several assumptions. One assumption is that the 10% yield on equities includes dividends. Another assumption will be a constant rate of inflation. (This can significantly impact treasury yields). We will also have to assume the correlation of bond yields responding to increases or decreases in stock yields. (This was estimated by reviewing some typical yield correlations over the previous six-month period). Lastly, we need to guess at where the markets will move over time and their likelihood of doing so.

To illustrate, we will suggest that there is a 60% chance of the stock market increasing 10% over the next year and a 40% chance of the stock market decreasing 15%. An inverse correlation of bonds with adjustments for how the market may typically react would give us a 60% chance that bond yields will decrease by 5% (a yield decrease from 4.2% to 3.98%) and a 40% chance yields will increase by 7% (a yield increase of 4.2% to 4.5%). (Refer to illustration) Even though the 10% and 15% change in stocks and 5% and 7% change in bond yields are different, they still have approximately the same correlation ratio of 1.5 to 1. In other words 15% is 150% more than 10% and 7% is 140% more than 5%.

Ex: Let's assume we invest \$955.00 in stock today. If the stock increases 10% over the next year, we will have \$1050.50. Assuming that we only have a 60% chance of this occurring we can make an adjustment by multiplying our theoretical return by 60%. This gives us \$630.30.

Our next step is to repeat this process for our alternative, stocks that are decreasing by 15% for the year. This alternative gives us \$811.75 times 40%, which equals \$324.70.

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By adding our two adjusted figures we get the following:  $\$630.30 + \$324.70 = \$955.00$ . In other words, we have a zero sum game. Even though the likelihood was greater that we would yield 10%, the losses were greater (1.5 times) if we were in the 40% chance of losing bucket.

So how do the bonds stack up for this example? By now applying the same process to the bonds and making an adjustment for the interest of \$40.13 ( $\$1,000.00 \times 4.13\%$ ), we end up with the following:

If stocks increase, bonds decrease in value. The \$955.00 we paid is reduced by \$65.00. (Creating a yield increase to 4.5%) However, our loss is offset by the interest we made of \$40.13. Because there is a 60% chance of this occurring, we multiply \$930.13 times 60%, which equals \$558.08.

Conversely, if stocks decrease, bonds increase in value. The \$955.00 we paid increases by \$52.00. (Creating a yield decrease to 3.98%) Our gain in our bond is enhanced by our interest of \$40.13 for a total gain of \$92.13. Because there is a 40% chance of this occurring, we multiply \$1,047.13 times 40%, which equals \$418.85.

By adding our two adjusted figures for bonds we get the following:  $\$558.08 + \$418.85 = \$976.93$ .

Clearly given the alternatives, stocks at a probability adjustment of \$955.00 vs. bonds of \$976.93, an investor might be more prudent in considering bonds. (Given all of the afore mentioned assumptions) One thing we've learned from our example is that bonds arguably should be considered by their appreciation + interest rather than only comparing the note rate or current yield to alternatives such as stocks. But there is one more implication often looked over by investors; the cost of losing.

Let's assume our worse case scenario happens to our stocks and our original \$955.00 investment decreases to \$811.75. We lost 15%. Well, if we make 15% the following year we'll be breaking even right?

Not so. Let's now assume it's the following year and we make an impressive 15% gain on our now, \$811.75. This equals \$121.76, which brings us up to only \$933.51. We would have to gain almost 18% percent to break even now, right?

Not quite. The first year we lost 15%, which also cost us the opportunity of investing our original \$955.00 at the start of year two. In other words, we could have invested \$955.00 at the start of year two and gained 10% to get us up to \$1050.50, an increase of \$95.50. Instead, we're only \$955.00 with our 18% gain. To catch all the way up to where we could have been, we would need a rate of return to the tune of over 28%!

While this article may sound like it is geared towards investing in bonds, it is actually a demonstration of the value in asset protection. Not losing, can be more important than winning because the one thing we are assured in life is that once time has passed us by, we can never get it back. Because of time's effect on your investments and because you now know the inverse relationship of stocks and bonds, you can use the two as a hedge against one another to mitigate your risk and protect your assets. Now that's winning!

# Inverse Correlation of Stocks and Bonds

