Are Stocks Too Dangerous for Retirees? A Covered Call Writing Strategy Which Reduces Risk While Harvesting the Expected Market Return

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ABSTRACT
A constraint on the typical retiree is that they cannot accept large drops in the value of their retirement portfolio, even temporarily. Traditionally, this has led to the recommendation that they invest in "safe assets", whose returns are modest albeit consistent. Stocks are considered to be an asset class whose returns are desirable, but is disqualified because of the variability in their returns. Here, we describe an approach which harvests the expected annual return of stocks, with acceptably low variability in returns. This approach could be suitable for retirees, and also for those who anticipate that the market is currently overvalued.

Keywords: covered calls, investment strategies, option pricing theory, retirement accounts

INTRODUCTION

For a young person, the rationale for putting a significant portion of their retirement funds in stocks is compelling. Suppose, for example, that they invest in an index fund which achieves the maximum possible diversification. During the last 100 years, index funds have (or would have, had they existed at the time) generated annual returns of 10-12%, depending on how the calculations are made. We will conservatively use the figure of 10%.

Assuming that the earnings in question are positive and meaningfully different from zero, any stock transaction can be understood as a purchase, whereby a dollar of earnings (per share) is multiplied by a price-earnings ratio (P/E) to obtain the purchase price (per share). Earnings compound over time. When the stock is sold, these new earnings are multiplied by another P/E to obtain the sales price. For example, suppose that the initial earnings are $1.00 (per share), and the P/E is 10. The initial purchase price (per share) is thus (1.00*10) = $10.00. If earnings compound at 10% per year for 50 years, the initial $1.00 in earnings becomes $117.39. If the P/E at the time of the sale is 10, the sales price becomes (117.39*10) = $1,173.90, and the annualized rate of return is 10%. It is straightforward to demonstrate that if the P/E at the time of the sale exceeds 10 the annualized rate of return will exceed 10%, whereas if the P/E at the time of the sale is less than 10 the annualized rate of return will lag 10%. In the short-term, differences in the P/E, which primarily reflect speculative considerations, dominate the calculation. However, in the long-term, changes in earnings, which primarily reflect economic considerations, prevail. For example, if the P/E at the time of sale is 5 rather than 10, the sales price becomes $586.95, and the annualized rate of return still exceeds 8%. "Buying high and selling low" is never the preferred course of action, but the relative impact of doing so lessens over time. [1]

An important argument for long-term investment in stocks is that corporate earnings represent overall economic performance, which in turn is driven (among others) by advances in science and productivity, trends which ought to continue for the foreseeable future. Of course, nothing is guaranteed – war, environmental disaster, or other profoundly negative

events could potentially intervene – but such events would be of a sufficiently large scale as to render any financial precautions ineffective, and so from the perspective of investment they may as well be ignored. Thus, a reasonable working assumption is that overall earnings are likely to continue to compound at 10% per year (on average), that the P/E at any point in time is unpredictable, non-fatal stock market crashes will continue to occur at irregular intervals, and moreover that such crashes are to be hoped for by younger investors as they allow new contributions to retirement funds to be invested at a bargain.

Designing investment strategies for retirement must deal with a fundamental problem – namely, that (1) while the investor is working market crashes don't induce any negative long-term consequences (and, indeed, create opportunities); but (2) once the investor is retired such crashes can be disastrous. The disaster is caused by the need to withdraw money (either to cover living expenses or because of statutory requirements) at the worst possible time. The same considerations apply not only to full-blown crashes, but also the periodic "bear markets" where performance is poor over a significant period of time.

The traditional approach to addressing this fundamental problem is to allocate resources in a way that reduces the variability in returns as retirement approaches. For example, a "life style mutual fund" might have an 80% allocation to stocks and a 20% allocation to bonds when the investor is in their 20s, with the allocation to stocks relative to bonds decreasing over time. By the time the investor is in their 70s, the allocation might be 20% stocks and 80% bonds. This same idea can be implemented in a number of other ways, but the core insight remains the same – namely, that as the investor ages riskier assets with high variability in returns should be replaced by safer ones with low variability.

According to economic theory, the fundamental relationship between risk and reward implies that these "safer" assets will have lower rates of return, which can be particularly problematic when the value of the retiree's investment portfolio isn't as large as desired. Some of the "safe" returns in question are particularly depressing – for example, the annual return for certificates of deposit is currently less than 2%. The choice for retirees is often presented as one between stocks – with a 10% expected annual return, but too much variability in those returns – and money market instruments – with <2% expected returns, but essentially no variability in those returns and the ability to withdraw money as needed. Bonds and similar asset classes don't necessarily solve this problem, because their expected returns lag those of stocks and also because their default risk implies that they can significantly lose value.

What retirees really need, especially those whose savings aren't as large as desired, is a method for obtaining the 10% expected annual return of stocks but with limited variability in those returns. On first blush, this specification seems contrary to what economic theory teaches about the relationship between risk and return. However, we will describe an investment strategy which meets this specification, and explain why it is consistent with economic theory.

METHODS

We have previously described the implications of a "buy-write" strategy using deep-in-the-money covered calls. [2] One example considered was L Brands (LB), which at the time of writing had a stock price of $18.33 and paid a quarterly dividend of $0.30. We illustrated buying LB for $18.33 and then writing a 12-month $10 (covered) call for a premium of $8.70. The discounted purchase price became $9.63, and the effective annual dividend yield increased from $1.20/$18.33 to $1.20/$9.63 = 12.5%. The maximum profit of the trade was (($10.00-$9.63) + $1.20) / $9.63 = 16.3%. This consisted of a maximum capital gain of $0.37, which had

a 99+% of occurring, because of how unlikely it was that the price of LB would fall below 10.00, plus an expected dividend income of $1.20, which was less certain to be realized (although more likely than not). Overall: (1) the maximum possible gain is capped at $1.57; (2) even discounting the possibility of a dividend cut, the expected return is at least 10%; and (3) the variability in returns is modest – especially, the probability that the return will be less than 10% is low. By all appearances, such a strategy harvests the expected 10% return of a typical stock, but with far less downside variability.

ANALYSIS

How can the above result be explained by economic theory? In understanding the nature of the transaction, it can be helpful to consider the motivations of the purchaser of the option. This purchaser gains two advantages. First, they have purchased the functional equivalent of catastrophe insurance. In other words, if LB were to go bankrupt during the next year the purchaser would choose not to exercise their option, and their losses would be limited to $8.70 rather than $18.33. This isn't a particularly important consideration here, as (1) the option purchaser would still lose a significant amount of money in case of catastrophe; and (2) the stock price is very unlikely to drop below $10.00.

The second benefit of purchasing the option is leverage. The purchaser will, for example, gain $1.00 if the price increases to $19.33, just as they would had the stock been bought outright. However, because they have spent only $8.70 instead of $18.33, a $1.00 gain in price generates a return of $1.00/$8.70 (11.5%) rather than $1.00/$18.33 (5.5%). This leverage provides significant value to someone who believes that LB will rise in price. Thus, the trade is beneficial to both parties. Moreover, because the writer of the covered call option has effectively ceded the annual gains in LB, they can reasonably demand a price which includes its expected annual return, plus a modest premium for selling catastrophe insurance. Put another way, the option writer has transferred essentially all of the speculative component of holding LB to the option purchaser, and at the same time collected its expected annual return.

What the deep-in-the-money covered call transaction has done, in effect, is to take the distribution of expected returns, which is too variable for a typical retiree to accept, and separate it into two components. The option buyer holds a component whose mean is the expected annual return (absent dividends) and whose variability is increased. The option seller holds a component whose mean is at least the expected annual return (including dividends, which are effectively enhanced by the leverage implied by a discounted purchase price) and whose variability is decreased to the point where it should be acceptable to a retiree. The variability in returns hasn't changed, nor has the relationship between risk and reward been suspended – instead, the variability in question has been transferred to a willing buyer who perceives speculative value in the transaction.

DISCUSSION

Retirees are sensitive to fluctuations in their retirement holdings, and must protect themselves against temporary declines in their value. We have argued that obtaining this protection doesn't imply that they must limit themselves to "safe" and low-yielding assets. Instead, by writing deep-in-the-money covered calls, they can essentially have other investors pay them the expected return of stocks, at acceptably low risk. This strategy works not because the usual relationship between risk and reward has somehow been suspended, but instead because the distribution of expected returns has been partitioned into two parts, one of which has increased variability and the other of which has variability which has been significantly decreased.

To implement this idea in practice, various embellishments are possible. The principle of diversification can be applied to the universe of potential trades, with the investor writing deep-in-the-money covered calls on multiple stocks, and doing so over multiple time points. Also, recognizing that selling insurance is profitable until it isn't, the investor might consider taking out insurance against a general market crash, for example by buying deep-out-of-the-money put options on a major market index.

In closing, we also note that this approach harvests not the actual market return in any particular year, but instead the expected market return, a quantity with considerably greater stability. Thus, it might not only be potentially suitable for retirees, but also for those who anticipate that the market is currently overvalued and thus that future returns will be less than the historical average.

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