The Secret to Steady Withdrawals? Steady Returns

Dr. Vinay Nair
Magnus Sigurdsson[1]
July 2016

[1] V. Nair is the founder of 55ip, and a visiting professor at MIT Sloan School of Management and The Wharton School at the University of Pennsylvania. Magnus Sigurdsson is a research director at 55ip.

CONTENTS

Introduction

Investors typically seek both long-term capital growth for future needs and current income for present needs from their investment portfolio. Since bonds have usually provided income far in excess of dividend yields, a mix of stocks and bonds has been the prototypical approach for meeting these respective needs. However, with current bond yields for even very long-term bonds being unprecedentedly low, investors may need to look at alternative approaches. Endowed institutions have long achieved this by seeking stable stock returns in excess of annual needs and using a program of withdrawals of appreciated capital to fund current income or spending. This approach can be used by others, but one needs to understand the importance of return stability and risk management to do this well.

Income at Increased Risk

Low bond yields have forced investors toward riskier credit instruments and high-yielding securities in other asset classes. But their increased capital flows to these securities has lowered expected returns in those asset classes. For instance, some high yield credit that yielded over 15% in 2009 fell to a low of 3.5% by the middle of 2014 – a questionable reward/risk offering.[2]

Yield starved investors have made many other securities vulnerable to rich valuations. The most notable have been master limited partnerships (MLPs), utilities and real estate investment trusts (REITs). From 2010 to 2014, investors directed $48.4 billion towards mutual and exchange-traded funds (ETFs) tracking utilities and REITs while simultaneously withdrawing $416 billion from U.S. equity mutual funds.[3]

Some of them, such as MLPs and high yield, have already started showing signs of increased risk over the past year since July 2015 as default risk in some sectors such as energy has increased and as the Federal Reserve has raised interest rates for the first time in nearly a decade. For example, high yield spreads have risen to over 6% and the MLP index had at one point lost over 50% since its peak in 2014.

Other securities are generating dividends in ways that may not be sustainable such as issuances of new stock or debt to enable dividends. An example of unsustainable dividends and disappointed income-seekers is the case of Kinder Morgan US, one of the largest MLPs.

In an environment lacking income-generating securities, KMI paid respectively $1.60, $1.74 and $1.61 of dividends per share in FY 2013, FY 2014 and FY 2015. During the same time period, net income to common shareholders was respectively $1.15, $0.89 and $0.10. Dividends were financed through share issuance among other means. Forced by the adverse conditions in the energy sector, KMI decided to slash its dividend by 74% in December 2015, resulting in significant destruction of wealth.[4] KMI stock, which traded at $43.13 on May 1, 2015, had fallen to $18.11 by March 1, 2016.

---

[2] Yield spread on the BofA Merrill Lynch high yield index.
[3] *The Wall Street Journal*, "U.S. Dividend Stocks Lose Luster," May 31, 2015.
[4] *Bloomberg News*, "Kinder Morgan cuts dividend by 74 percent to conserve cash," December 8, 2015.

These dynamics highlight that even as investors direct capital to corners where they may generate some income, they may end up losing a significant portion of their principal! In other words – across bonds and substitutes – the desire to grow capital and the resulting actual income seems to be in conflict. Today, when rates and yields still remain low and there's increased risk of price movements skewing to the downside, this conflict between income and growth may be particularly acute in traditional forms of income generating assets.

A Safer Approach to Generating Income – The Endowment Approach

In these times, reaching for current income from securities designed to deliver it is like trying to get water from a stone. But there are alternatives. One is to systematically sell a small portion of one's investments in a steady manner to replicate long-term income. In fact, if income needs are higher than yields provided by available securities, one has almost no choice but to do this. But given the paltry income of bonds and the high risk of capital loss from rate hikes, it might be better to manufacture income by periodic and steady withdrawals from an investment portfolio that is safer or less volatile.

This is the approach that institutional endowments have utilized, where they design their portfolio for the best risk-adjusted return and then withdraw a specified amount – typically between 4% and 6% every year. This approach is particularly relevant for current market conditions.

But this begs a deeper understanding of the factors that impede the possibility of maintaining a steady income through withdrawals from a portfolio.

Low Volatility Investing

The most obvious concern in achieving steady income is the inherent riskiness in financial markets and the wild price swings of asset returns. Investment strategies that aim to minimize these price swings may be beneficial to investors who are interested in manufacturing income through selling portions of the portfolio.

Low volatility products have certainly gained attention recently. According to The Wall Street Journal, strong demand from anxious investors has led investment firms to roll out more than 20 low-volatility stock funds and exchange-traded funds (ETFs) since 2011.5 These funds and ETFs aim to tame volatility by buying stock in only financially strong companies whose share prices tend to move much less than broad market indexes. The providers of these funds often point to studies that show that low volatility stocks outperform high volatility stocks on a risk-adjusted basis over the long term.

However, research has also shown that the superior performance is not actually driven by the core thesis of concentrating in the lowest volatility securities, but, instead, largely influenced by the side effect of avoiding high volatility stocks.6 This is particularly important today since many low volatility stocks are also dividend payers and therefore vulnerable to the valuation risk discussed earlier. If not careful, a low volatility portfolio might simply be another moniker by which an investor ends up holding dividend paying utilities, MLPs and REITs!

---

[5] *The Wall Street Journal*, "In Search of Low-Volatility Investments," September 8, 2015.

[6] "Understanding defensive equity," Robert Novy Marx, University of Rochester and National Bureau of Economic Research (NBER), March 2016.

Security selection is not the only way to generate lower volatility; there are other ways to skin that cat as well, most notably with risk management. Research has shown that investors should be able to predict volatility and, as a result, adjust their portfolios to avoid periods of high volatility.[7]

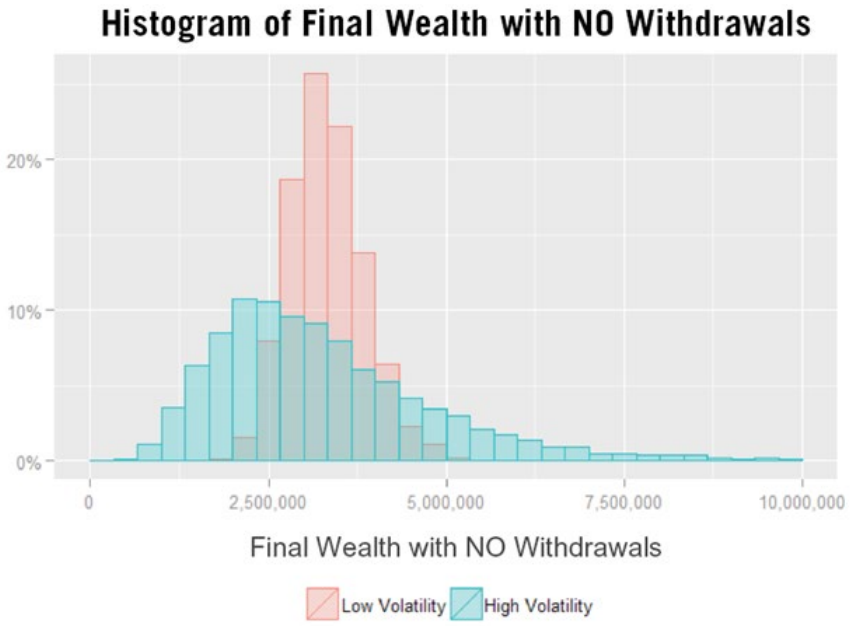
It's Not Just About Returns, Volatility Has a Great Impact on Wealth

The ability to dampen volatility has significant effects on investor wealth. To see this, let's run some simulations.

We generate 10 years of daily returns from a normal distribution of returns with an annual return of 12% and an annual volatility of 15%. We calculate the final wealth of a $1 million investor who realizes these returns. We repeat this entire exercise 10,000 times (or for 10,000 different investors) with a new randomly generated return series each time. Under these assumptions, an investor's final (median) wealth is found to be $3 million, with a range of $1.6 million (10th percentile) and $5.4 million (90th percentile) over the 10,000 draws.

If the investor has access to a similar return stream – the same annual return, but with a lower volatility of 5% instead of 15% – the same exercise generates very different results. An investor's final (median) wealth is now found to be $3.3 million, with a range of $2.7 million (10th percentile) and $4 million (90th percentile). Higher lows and lower highs are a natural outcome of the lower volatility, but the higher median outcome reflects the crucial insight about how prices compound better in the presence of lower volatility to generate more wealth.

The effect of volatility can be seen more clearly by comparing the distribution of an investor's final wealth in the two scenarios that differ in volatility but are otherwise identical.



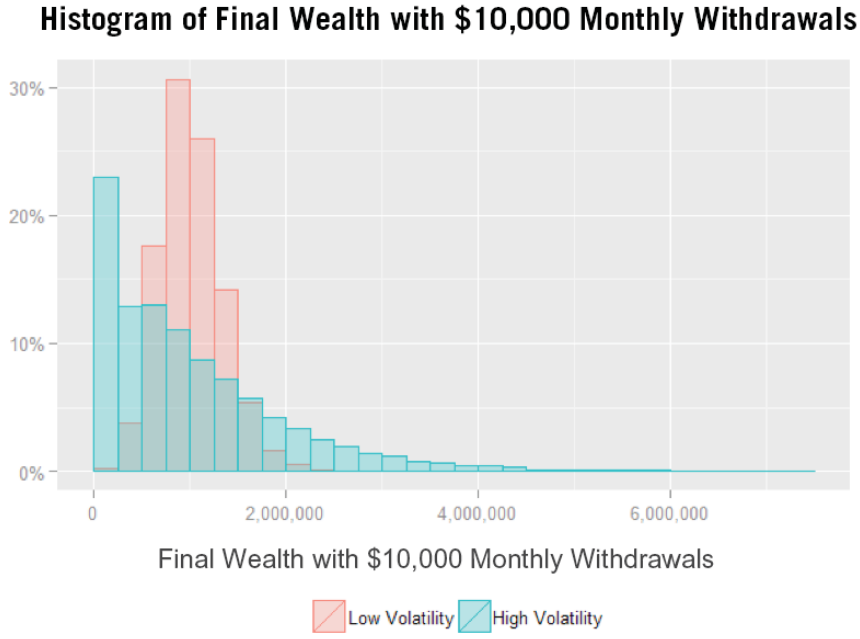
Source: 55ip

[7] A more detailed discussion of this aspect can be found in the 55ip white papers on volatility timing and smart insurance.

The Magnified Impact of Volatility in The Presence of Withdrawals

Low volatility investing is particularly important when investors seek to generate a steady stream of income from their portfolios. To see this, we modify the previous simulations to include a fixed monthly withdrawal of $10,000. This amount would generate an annual income of $120,000 – equal to the 12% return expectation for a $1 million investor. In the presence of this steady monthly withdrawal, the same exercise generates very different findings than before.

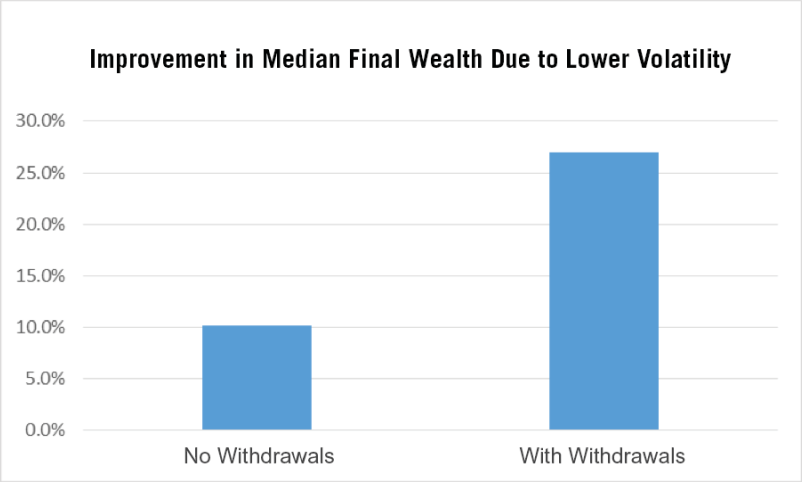
Using these new withdrawal assumptions, a high volatility investor's final wealth is found to have a reduced (median) value of $0.78 million, with a range of $0 (10th percentile) and $2.3 million (90th percentile), but a low volatility investor's final wealth is found to have a (median) outcome of $0.98 million with a range of $0.6 million (10th percentile) and $1.4 million (90th percentile).



Source: 55ip

Note that in some cases of the high volatility portfolio, if an investor is unlucky she can lose all her capital. This would also imply that she will not be able to generate monthly withdrawals for some period of time leading up to the 10-year mark. In the low volatility scenario, this is not a possibility. In the presence of withdrawals, the impact of volatility on the investor's final wealth is even more dramatic as seen in the following chart.

To summarize, there are two ways in which lower volatility helps investors who seek to derive steady withdrawals from their portfolios. First, the lower volatility ensures they can achieve their objective of steady monthly withdrawals for a longer period of time. Second, their likely final wealth is higher by almost 26%. They can have both a higher total sum of wealth and a better series of withdrawals. Reducing volatility pays huge dividends – yet, faced with this idea, most investors would be tempted to chase better returns, not better volatility.



Source: 55ip

"Stuck in the Hole" Phenomenon and Peak-To-Trough Losses

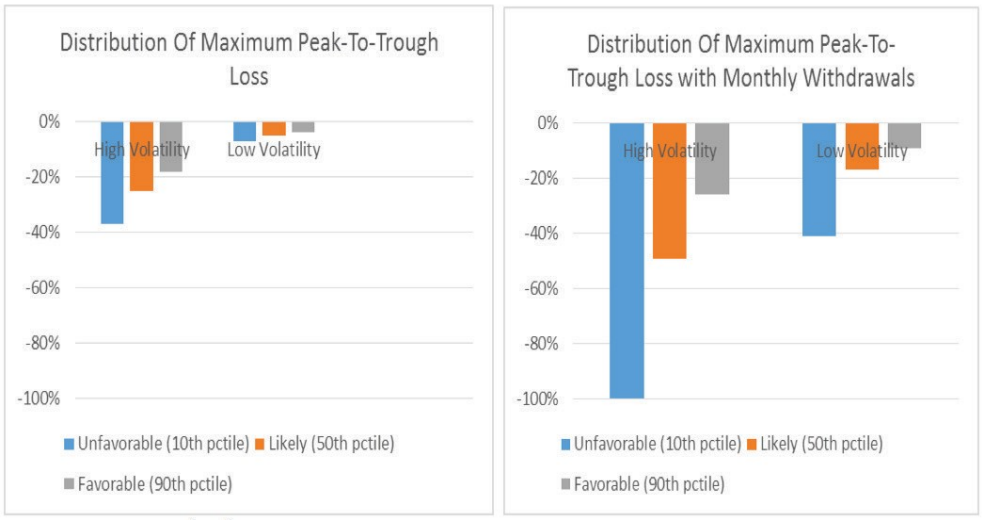
The problem with higher volatility (even if associated with higher returns) in cases where regular withdrawals are important arises from the fact that it takes longer to generate the same amount of wealth starting from a lower base.

When returns are negative and large (not improbable in a high volatility portfolio), investors are "in the hole". If the value of the portfolio drops and withdrawals stay the same, further withdrawals deepen in the hole, making it difficult to recover. If the withdrawals are a fixed amount, as considered here, this can
constantly erode the portfolio going forward. If the withdrawal is not fixed, then of course, spending has to be cut significantly.

This likelihood of finding yourself in the hole is higher early in the investing horizon. As a result, the sequence of returns is important. For the same volatility, if the negative returns are realized first, investors can find themselves in an investing version of quicksand. This risk is exacerbated in higher volatility portfolios.

To evaluate the implication of these risks, it is helpful to consider the maximum peak-to-trough loss that is possible. Let's first consider the scenario without withdrawals. The distribution of maximum peak-to-trough loss shows that higher volatility does indeed increase the magnitude of drawdowns. The median level of maximum drawdown increases from -5% to -25%. But this 20% difference is further exaggerated if an investor needs steady withdrawals. The likely drawdown now increases from -17% to -49%, a deterioration of 32%.

Also, note that in this case, there are several scenarios where the drawdown will be 100% in the high volatility scenario. In fact, the 10th percentile of the maximum peak-to-trough drawdown across the 10,000 simulations is indeed 100%. As will be discussed below, a portfolio that aims to minimize drawdowns then is far more valuable than others. The exhibit below helps visualize how the presence of withdrawals interacts with higher volatility to magnify the risk of catastrophic drawdown.



Higher Volatility and Higher Tail Risk

While we have done these studies assuming a normal distribution with symmetric risk and volatility, we are aware that returns are not as neatly distributed. We know from the study of market level returns that returns do not exhibit a standard normal function with symmetric upside and downside. In fact, aggregate stock market returns display negative skewness. That is, markets have the propensity to generate large negative returns with greater probability than suggested by a symmetric distribution.

This feature is well documented and a large body of academic literature has aimed to explain this fact about the distribution of aggregate stock returns (e.g., Fama 1965; Black 1976; Christie 1982; Blanchard and Watson 1982; Pindyck 1984; French, Schwert, and Stambaugh 1987; Hong and Stein 2003).

Negative skewness only exaggerates the above concerns regarding volatility in the presence of withdrawals. The exact magnitude of such asymmetric tail risk is an empirical exercise that can either be small or significant based on assumptions made about how volatility, downside risk and "rare" events interact. But what is appearing more common is the occurrences of such "rare" and "unusual" events. There may be some good reasons for the observed tail risk and increasing frequency.

As volatility increases, the risk of investor liquidations increases. If these liquidations happen by multiple investors at the same time, as in a fire sale, asset returns drop significantly and may be a source of the observed skewness in returns. This domino effect of sequential liquidations can have significant negative implications to returns. These risks are further heightened in a world where there is a significant overlap in the type of investment strategies different managers follow. The increase in crowded positions and strategies increases the fire sale and contagion risks.

Increased familiarity with risk management rules and similarity of risk management rules used by different investors further exacerbates this problem. For example, if all investors use the same VaR level on the market or a position, they all start liquidating at the same time.

Simple diversification fails to address this risk. If everyone is diversified in a similar manner, the liquidations will create a situation where correlations across assets spike up and the historical low correlations that justified the diversifying mix would no longer be true. This is an important lesson for investors who seek downside protection from "unusual events". Low past correlations that can justify capital inflows may eventually increase liquidity-driven tail risk. In other words, diversification of normal risk can lead to a concentration of tail risk. In higher volatility periods, investors are more vulnerable to such liquidity shocks and an increased probability of tail risk.

As a result, one can see that the use of this approach, which is common among many institutions, requires finesse and careful engineering. Ideally, one has a portfolio designed with a conscious minimization of volatility (much of which comes from diversification), delivering asymmetrical returns (reducing both the likelihood and size of drawdowns), and protection from tail risk (which may be introduced from a lack of care in seeking diversification).

Conclusion

Volatility management of portfolios is especially important in the context of generating income through withdrawals. This need for steady withdrawals is challenging today and is expected to be so for the foreseeable future since rates and yields are low and prices for yield-providing securities appear high. Investors can learn from endowments and other institutions that use steady withdrawals to meet their spending needs.

There are two ways in which lower volatility helps investors who seek to derive steady withdrawals from their portfolios. First, the lower volatility ensures they can achieve their objective of steady monthly withdrawals for a longer period of time, without running out of money. Second, their likely final wealth is higher with lower volatility. They can have both a higher total result wealth outcome and a better series of withdrawals. At 55ip, we use these insights to generate portfolios with downside protection across equities, asset allocation and macro strategies.

55ip
617-960-9559
www.55-ip.com

BOSTON OFFICE
One Liberty Square, Suite 200, Boston, MA 02109

NEW YORK OFFICE
12 East 49th Street, 11th Floor New York, NY 10017

MUMBAI OFFICE
Aston Building, 10th Floor Shastri Nagar, Andheri (W),
Mumbai 400 102, India