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How to Deliver Higher Certainty to a Financial Plan

By Dominick Paoloni, CIMA®



INVESTMENTS & WEALTH INSTITUTE®

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In my 35 years as a financial professional, the number-one question that I still receive from clients is, “Will I outlive my income?” To find the answer, like most financial professionals, I give my clients a detailed questionnaire and we enter their information into a financial software program that generates the probability of them outliving their income and savings.¹ The software then recommends a portfolio allocation that best matches a client’s risk tolerance.

TOO CONSERVATIVE TO HIT GOALS

Problems arise when the client’s risk profile is so conservative that the resulting recommended financial plan allocation² cannot reliably provide for long-term financial needs (see figure 1).

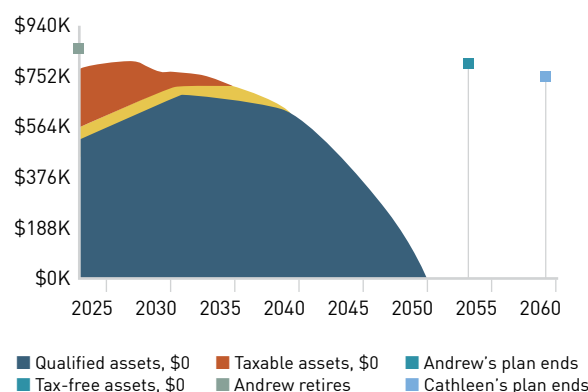
Considering the poor performance of clients’ portfolios in 2022, it is

not surprising that consumer confidence currently is at historic lows (see figure 2) and clients’ aversion to risk/losses within their portfolios is quite high. This puts the average financial professional in a very difficult position.

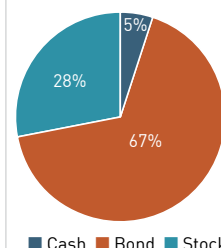
Developing a successful financial plan that matches a client’s conservative risk profile and still provides enough growth to meet the client’s long-term financial needs is a quagmire for advisors.

Figure 1

CONSERVATIVE RISK ASSESSMENT EXAMPLE



You chose a risk score of 1
Appropriate portfolio:
Capital Preservation 1
Percentage stock: 28%
Average return: 4.05%

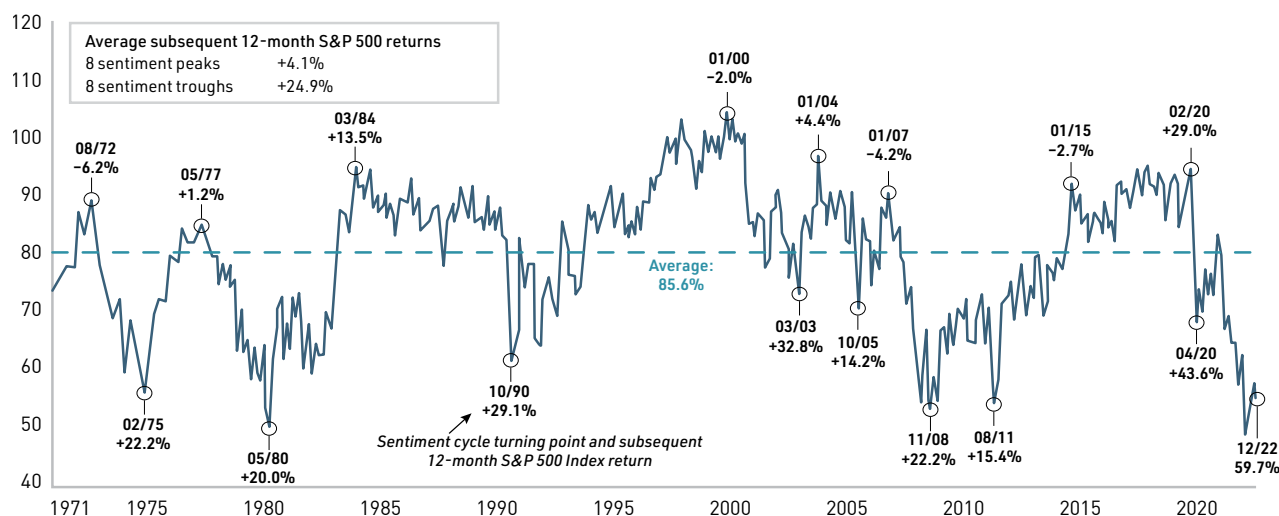


Source: MoneyGuidePro | MoneyGuideElite

Figure 2

CONSUMER CONFIDENCE AND THE STOCK MARKET

Consumer sentiment index and subsequent 12-month S&P 500 returns

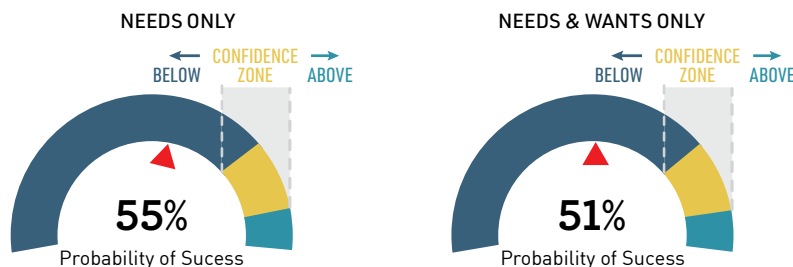


Peak is defined as the highest index value before a series of lower lows, while a trough is defined as the lowest value before a series of higher highs. Subsequent 12-month S&P 500 returns are price returns only, which excluded dividends. Past performance is not a reliable indicator of current and future results. Guide to the Markets - U.S. Data are as of December 31, 2022. Source: FactSet, Standard & Poor's, University of Michigan, J.P. Morgan Asset Management.

Figure 3

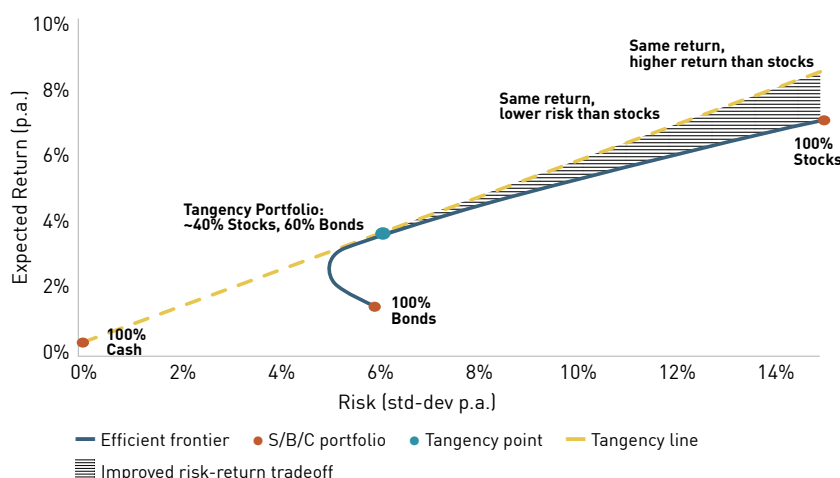
LIKELIHOOD OF REACHING GOALS AFTER LOSS OF 20 PERCENT

Bear market scenario; using all assets to fund goals by importance



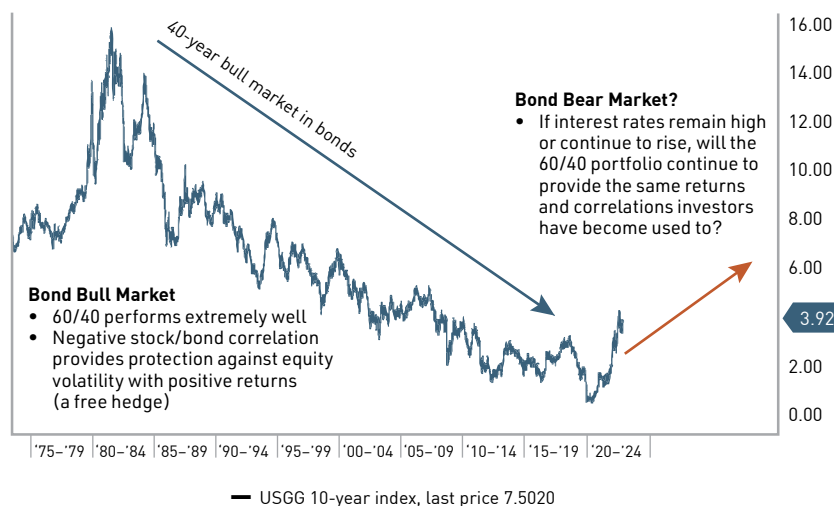
Source: MoneyGuidePro | MoneyGuideElite

Figure 4

EFFICIENT FRONTIER AND TANGENCY LINE IN STOCK/BOND/CASH PORTFOLIO

Source: Early Retirement Now (earlyretirementnow.com)

Figure 5

ARE HIGHER INTEREST RATES THE END OF THE 60/40 STOCK/BOND MIX?

Source: Bloomberg Finance LP® Data and IPS Strategic Capital calculations

HOW DOES A FINANCIAL PLAN FORECAST SUCCESS?

All financial plans run a simulation called a Monte Carlo, which is based on historical average returns and historical average volatility (standard deviation annualized). The model generates random yearly returns over 1,000 periods based on the basic laws of statistics.

The premise of the Monte Carlo simulation is to show clients how the volatility of returns can affect the probability of them outliving their income.

As you lower portfolio volatility/risk, the probability of the plan's projections being accurate increases; however, lowering volatility also lowers the plan's projected average return. Herein lies the problem.

If we take the client's plan to the other extreme and invest capital in a more aggressive portfolio, such as the S&P 500 composite with its 9.3-percent historical annualized return and 17.1-percent annualized standard deviation,³ the plan shows a success probability of 66 percent, which is below desired confidence levels.

Although the plan's probability of success went up by increasing the return of the portfolio, the volatility of return increased, causing the plan to deliver below the confidence zone. The confidence zone is forecasting the probability of the plan being successful. The bear market scenario in figure 3 shows that the plan would deliver even less probability of success.

REDUCING VOLATILITY BUT NOT RETURN

The work of Nobel laureates Harry Markowitz and William Sharpe attempted to improve this risk-to-return paradigm through mean-variance optimization to find the optimal portfolio on the efficient frontier that, historically speaking, will deliver the highest mean return with the lowest historical volatility (see figure 4).

However, this model comes with its own set of problems. Predicting capital market assumptions such as future return, variance, and correlation is not easy. In their seminal work, the two Nobel laureates determined that from a historical perspective, 60-percent in stocks and 40-percent in bonds was in a macro sense the most optimal on the efficient frontier.⁴

DID THE 60/40 DELIVER IN THE HIGH CONFIDENCE ZONE?

Can a traditional financial plan based upon a 60/40 stock/bond mix meet a client's needs, especially after a year such as 2022, one of the worst years in history for 60/40 portfolios? This is especially true if the 40-year bull market in bonds is in fact over (see figure 5). Is it disconcerting that the 60/40 may not be an optimal strategy going forward, because many economies feel bonds will underperform in the years to come?

When I recently ran a client's portfolio through the Monte Carlo simulation using the traditional 60/40 stock/bond mix, which historically has shown 8.62-percent annualized return with an annualized volatility of 10.90 percent,⁵ the simulator predicted an 80-percent probability of the plan succeeding.

An 80-percent forecast puts the client in the yellow confidence zone, a nice improvement from the software's recommended plan and the 100-percent S&P 500 composite return; however, the bear market scenario put the plan in the danger zone (see figure 6).

THE ANSWER LIES IN INTEREST RATES

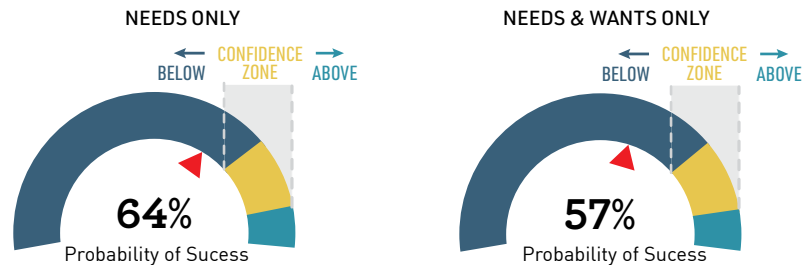
Is it possible to improve the risk-to-return paradigm beyond the mean-variance model in the current economic climate by mathematically reducing volatility of returns as well as eliminating correlation assumptions?

Short-term interest rates have not been this high in 15 years (see figure 7). As of

Figure 6

LIKELIHOOD OF REACHING GOALS AFTER LOSS OF 20 PERCENT

Bear market scenario; using all assets to fund goals by importance

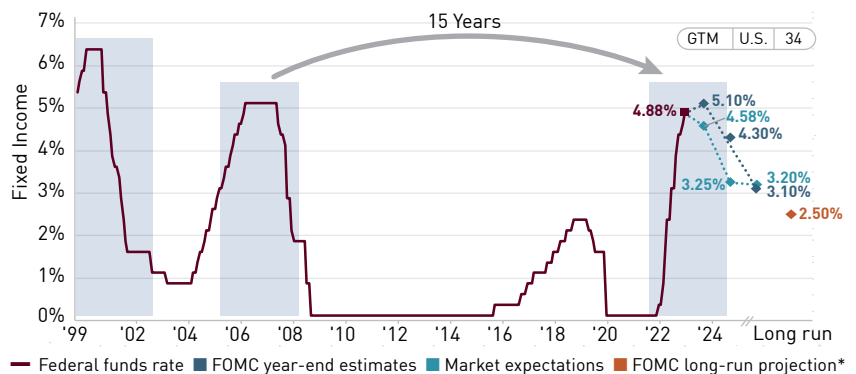


Source: MoneyGuidePro | MoneyGuideElite

Figure 7

THE FED AND INTEREST RATES

Federal funds rate expectations—Federal Open Market Committee (FOMC) and market expectations



FOMC March 2023 Forecasts

	2023	2024	2025	Long Run*
Change in real GDP, 4Q to 4Q	0.4%	1.2%	1.9%	1.8%
Unemployment rate, 4Q	4.5%	4.6%	4.6%	4.0%
Headline PCE inflation, 4Q to 4Q	3.3%	2.5%	2.1%	2.0%
Core PCE inflation, 4Q to 4Q	3.6%	2.6%	2.1%	

Source: Bloomberg, FactSet, Federal Reserve, J.P. Morgan Asset Management: FOMC = Federal Open Market Committee

Market expectations are based off of the respective Federal Funds Futures contracts for December expiry. *Long-run projections are the rates of growth, unemployment, and inflation to which a policy maker expects the economy to converge over the next five to six years in absence of further shocks and under appropriate monetary policy. Forecasts are not a reliable indicator of future performance. Forecasts, projections, and other forward-looking statements are based upon current beliefs and expectations. They are for illustrative purposes only and serve as an indication of what may occur. Given the inherent uncertainties and risks associated with forecasts, projections, or other forward-looking statements, actual events, results, or performance may differ materially from those reflected or contemplated. Guide to the Markets—U.S. Data are as of April 24, 2023.

this writing, the one-year Treasury bill (T-bill) is breaching 5 percent, and it is important to note that a T-bill held to maturity has zero volatility.

Because the 60/40 portfolio was shown to be too risky for my client's conservative profile, the client instead asked if the plan would achieve success if 100 percent of capital was invested in a one-year T-bill and interest rates stayed at 5 percent or higher.

Unfortunately, after running the financial plan at 5 percent with zero volatility of return, the plan still failed. Even though we were able to reduce volatility to zero, 5 percent annualized failed to provide enough growth for the plan to succeed.

INDEXING THE INTEREST FROM A TREASURY BILL

What is an index Treasury note? Using a T-bill, arguably the most secure investment in existence, we can index

the interest in an optional market security. In this way, we can define clients' future risk today accurately, and thanks to our current high interest rates, we can provide extremely attractive risk-reward options.

For example, we can index the interest rate from a T-bill to a stock or exchange-traded fund that provides underlying exchange-traded options. By applying the value of the future interest in an option, we can deliver upside market

exposure with zero downside when held to maturity.

How is it possible to guarantee a 100-percent return of capital at maturity and still provide significant market exposure? As shown in figure 8, if we start with \$100,000 and invest \$95,000 in a one-year T-bill that will mature with a value of \$100,000, we can then invest the remaining \$5,000 in one-year exchange-traded call options.

The call options can be indexed to any optionable security, i.e., exchange-traded funds or individual stocks. This will provide defined participation in market gains and protect against potential market losses, all without risking any principal of the initial \$100,000 investment.

UNDERSTANDING OPTIONALITY

An option is the right but not the obligation to purchase the underlying asset. With this option we can control a large portion of the market with a small amount of capital. An option is a very powerful tool that leverages market exposure, and options are the only financial instrument that provides non-recourse leverage.

The risk and return when purchasing an option are (1) known upfront and (2) the risk is limited to the cost of the option. Options allow us to define our exposure to the underlying asset.

Table 1 shows that with \$5,000 invested in a call option we can control \$50,000 (as of this writing) or 10X leverage.⁶

In other words, I can invest \$50,000 of my \$100,000 in the market, giving 50-percent upside exposure to the market and 50 percent of the downside of the market, or invest \$5,000 in call options, which will deliver the same upside exposure with zero downside exposure. How is this possible? All that is being risked is the interest of \$5,000 invested in the options. The \$95,000 invested in the one-year T-bill will

Figure
8

U.S. TREASURY BILL EXAMPLE

Scenario Information	
Entry Date	12/31/2022
Principal Investment Amount	\$100,000
U.S. Treasury Bill	
Maturity Date	12/31/2023
Price	\$95.00
\$ per U.S. Treasury Bill	\$950.00
# Treasury Bills Purchased	100
Cash Outlay at Entry	\$95,000
Value at Maturity	\$100,000
Gain in U.S. Treasury Bill	\$5,000
Cash remaining after U.S. Treasury Bill Purchase	\$5,000

As long as the U.S. Treasury does not default on its debt, you know with 100-percent certainty that the U.S. Treasury bills you purchase will be worth \$100,000 at maturity, providing you with a full return of your capital in one year.

We still have \$5,000 left over ... what can we do with this?

Note: The price of options varies on a daily basis so the effect of leverage can be variable.

Source: Hypothetical scenario, inputs, and calculations provided by IPS Strategic Capital

Table
1

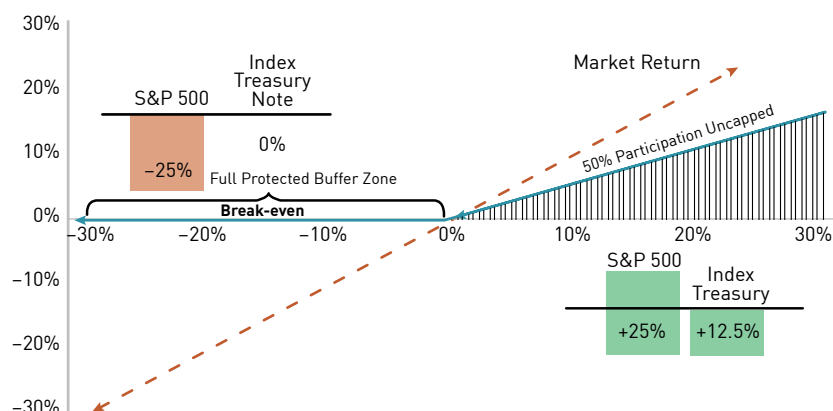
COMPARING STOCK TO A CALL OPTION

	Stock	Call Option
Price	\$100	\$5.00
Strike Price	-	100
Shares/Contract	1,000	5
Notional Exposure	\$100,000	\$50,000
Total Cost	\$50,000	\$5,000
Leverage	1X	10X

Note: Hypothetical scenario, inputs, and calculations provided by IPS Strategic Capital

Figure
9

ONE-YEAR INDEX TREASURY NOTE-S&P 500 (FULLY PROTECTED UNCAPPED)



Source: Hypothetical example, inputs, and calculations provided by IPS Strategic Capital

return \$100,000 at maturity. You will participate if the market goes up, and if the market loses value you will not be exposed to these losses. You would finish the year with the entire \$100,000 that you started with.

PUTTING IT ALL TOGETHER

Let's take another look at our client's financial plan that failed with the software's recommended allocation (see figure 9). The S&P 500 composite allocation improved the probability of success but still fell below the confidence level and the 5-percent fixed interest rate portfolio fell below the confidence level.

The traditional 60/40 mix did deliver above confidence level but failed in the bear market test. By creating an index Treasury note, using the 5-percent interest as the present value of future cash flows from the T-bill, the calls provided 50-percent exposure to S&P 500 gains, dramatically increasing the probability of the financial plan's success.

During the past 29 years, 50 percent of the S&P 500 with zero downside risk historically has averaged 6.6 percent with an annualized volatility of 2.2 percent (see figure 10).⁷

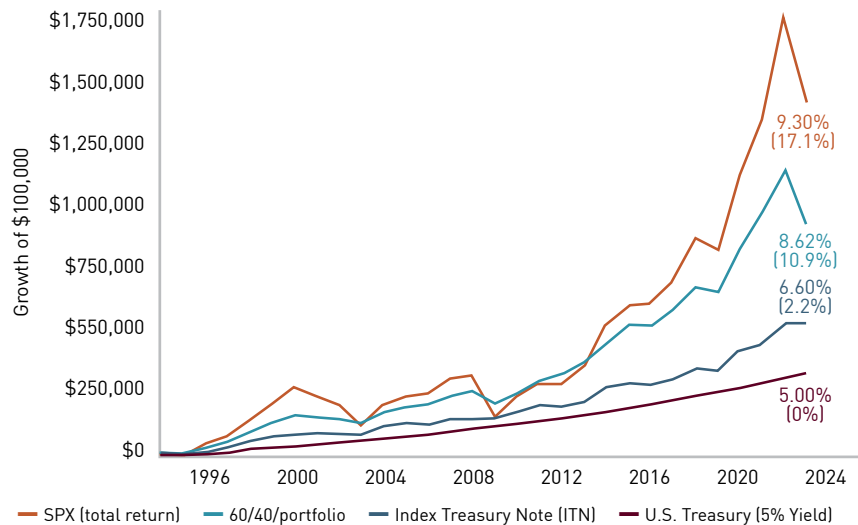
The 60/40 stock/bond mix compared to the index Treasury note capturing 50 percent of the upside took the client's plan from an 80-percent chance of success to a 96-percent chance of success (see figure 11).

Even though a 60/40 stock/bond mix historically has returned 2.02 percent more on an annualized basis than the index Treasury note capturing 50 percent of the S&P 500 (8.62 percent versus 6.60 percent), the index Treasury note returns were achieved with far less volatility/risk. The annualized volatility of return of the fully protected index Treasury note is 2.2 percent, compared to 10.9 percent for a 60/40, which is a decrease of 8.7 percent in annualized volatility with zero downside risk. This is the driving factor in why the plan succeeded.

Figure 10

INDEX TREASURY NOTE VS. SPX, 60/40, AND U.S. T-BILL

Volatility of returns can have a dramatic effect on retirement



Source: S&P 500 represents the returns of the S&P 500 Total Return Index. The 60/40 represents the performance of a hypothetical portfolio allocating 60 percent to the S&P 500 Total Return Index and 40 percent to the Bloomberg US Treasury Total Return Index, rebalanced back to its weighting scheme yearly. The performance of the index Treasury note represents a hypothetical investment in an ITN that captures 50 percent of the upside performance S&P 500 price return on an annual basis while returning 0 percent in years where the S&P 500 price return was flat or down. The performance of the U.S. Treasury Bill (5-percent yield) is a hypothetical illustration of an investment in a risk-free asset that earns 5 percent per year. All data obtained from Bloomberg Finance LP* and all calculations performed by IPS Strategic Capital.

As Mark Yusko, the former endowment officer for the University of North Carolina at Chapel Hill, once said at a conference I attended, "It's not the return on your money that grows wealth, it is the volatility of return on your money."⁸ Based on this limited analysis, truer words have never been spoken.

The real home run of using a fully protected index Treasury note is the fact that, even in a bear market scenario, the plan succeeds because this strategy does not produce negative returns in down years.

This brief review of a particular client's financial plan has shown how an advisor can meet the challenges of developing a successful plan even when facing uncertain market conditions with an extremely conservative client risk profile.

As a financial professional, there is always uncertainty about where, when, and how to best allocate clients' capital. The logical approach is to examine the

Figure 11

RECOMMENDED SCENARIO



Source: MoneyGuidePro | MoneyGuideElite

data and allocate your clients' capital accordingly.

Today, with short-term interest rates at a 15-year high, there is a unique opportunity to deploy capital capturing market upside with considerably less risk.

If an advisor is looking to minimize portfolio risk and optimize client gains, why wouldn't that advisor invest capital in a way that would skew the risk-to-return paradigm, giving you market upside with little to no downside exposure? Investing your capital in a 60/40 stock/bond mix because it has worked in the

past is like driving your car while looking in the rearview mirror.

Using T-bills, which are the safest investment on the planet, combined with exchange-traded options greatly reduces the uncertainty for a client's financial success.

We don't know where interest rates will be in the future, but the Federal Reserve has indicated that they will remain elevated. If we enter an extended period of rising interest rates, as we saw in the 1970s, index Treasury notes should be a fundamental element of all portfolios. 

Dominick Paoloni, CIMA®, is chief investment officer and founder of IPS Strategic Capital and an adjunct professor at the University of Denver and the University of Colorado. Contact him at dominick@investps.com.

CONTINUING EDUCATION

To take the CE quiz online, go to www.investmentsandwealth.org/IWMquiz

ENDNOTES

1. The software used is MoneyGuidePro.
2. MoneyGuidePro recommends a specific portfolio based on a particular client's risk score on its questionnaire.
3. The S&P 500 composite does include dividends. The return and volatility are calculated using 29 years of historical return time series then entered into the Monte Carlo.
4. "This Year's Laureates Are Pioneers in the Theory of Financial Economics and Corporate Finance," press release (October 16, 1990), <https://www.nobelprize.org/prizes/economic-sciences/1990/press-release/>.
5. The 60/40 stock/bond mix does include dividends. The return and volatility are calculated using a 29-year historical return series then entered into the Monte Carlo.
6. Interest rates and option prices change daily. This was achievable at the time the article was written.
7. These numbers were calculated using a 29-year historical time series and the standard deviation was calculated by taking one-third of the return, which simulates a three-sigma downside deviation in the Monte Carlo, creating a 99.9 percent confidence of 0 losses in down years. These returns do not include dividends.

8. "10 Potential Surprises for 2018," Investment Advisor Forum, Investments & Wealth Institute, January 16, 2018.

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One should always consult an investment advisor before making any investment decisions as well as consider the investment's objectives, risks, charges, and expenses carefully before investing or sending money. This and other important information about the Strategy is available upon request.



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