THE VALUE OF RISK CONTROL ACCOUNTS

IN RETIREMENT PLANNING

CUNA MUTUAL GROUP

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IN BRIEF

- Volatility has scared many investors out of the market, and low interest rates have given them little opportunity to grow their savings.
- Traditional retirement planning uses Modern Portfolio Theory and standard diversification to try to mitigate risk and reduce this volatility. However, the standard approach does not provide guarantees against dramatic loss, nor does it address the behaviors that can contribute to these losses. Standard investment metrics don't adequately reflect these facts.
- Risk control accounts offer new ways to protect against loss while still delivering growth potential.
- These risk control accounts can help individuals stay invested during volatile times, therefore delivering the opportunity for higher long-term returns.
- Looking at specific market cycles demonstrates risk control's potential benefits during different conditions.
- Investors should work with their financial advisor and consider the value of adding risk control accounts when evaluating their investment strategy and making decisions about their portfolios.

The Value of Risk Control Accounts

IN RETIREMENT PLANNING

A decade of historically low interest rates has failed to nudge more investors into equities. Regardless of the narrative the Fed hoped to inspire with years of a near 0% rate policy, the turbulent economy has sent many to the sidelines. Persistent episodes of market volatility have kept them there. Even when logic urges them to stay invested during volatile times, emotional investors can't control their instinct to flee. Under these conditions, individuals turn from investors into savers, worried most about simply hanging on to what they have in a risky and complex world.

Traditional retirement planning attempts to mitigate the risks of today's world through diversification. But while this standard approach can help manage risk, it cannot control risk.

There is a new way to look at financial planning that rethinks diversification and introduces an entirely new asset class into the mix. That new asset class is risk control.

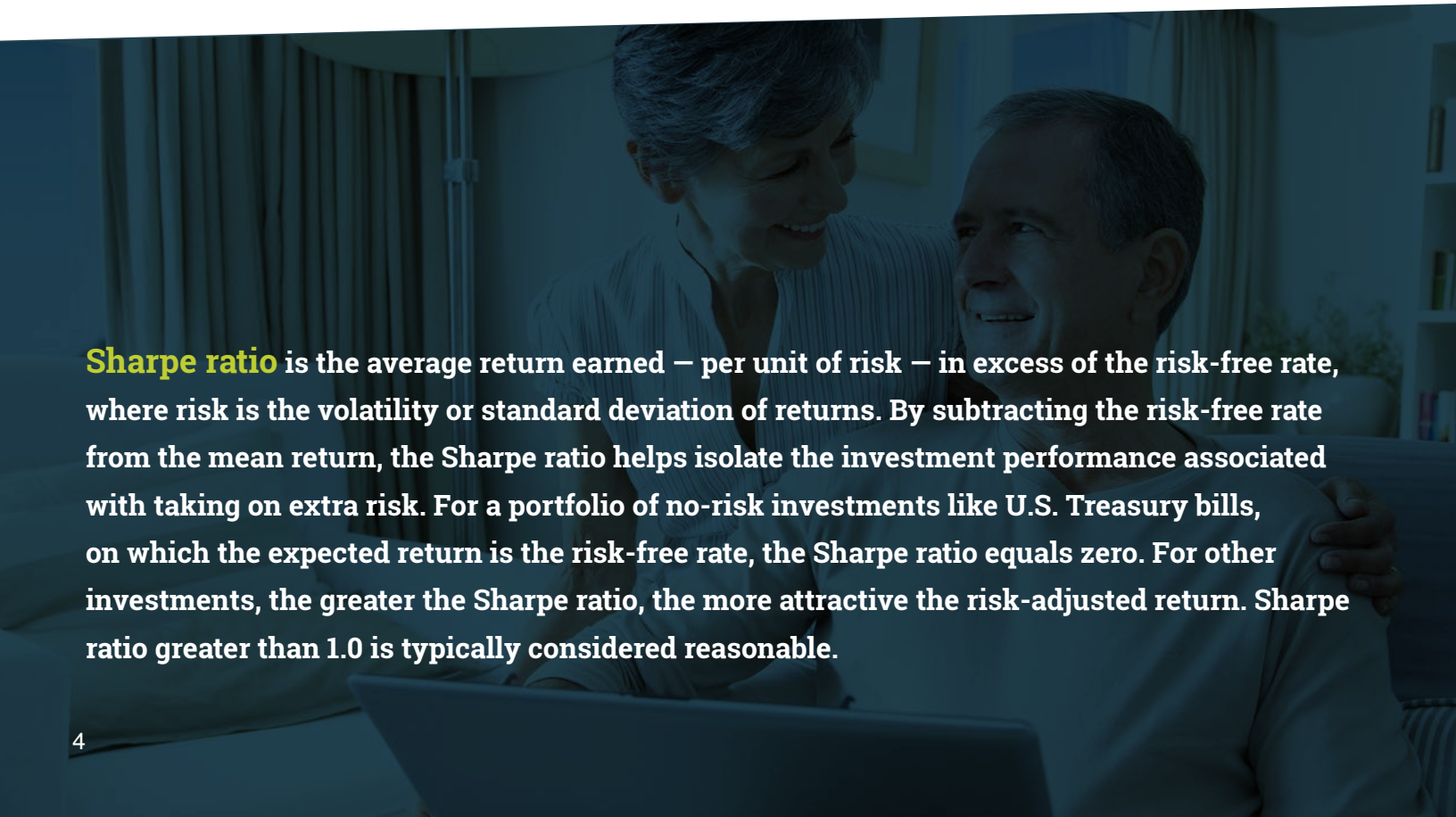
Incorporating risk control into a portfolio goes beyond standard allocation and risk/return optimization, and offers real loss protection and opportunities for growth. Traditional portfolio analytics won't tell the complete story. But when we add risk control accounts into a portfolio, we can add real value and begin to transform savers back into investors. It's time to rewrite the story of financial planning to include risk control.

The Traditional Approach

To see how the addition of risk control can rewrite the story of retirement planning, it helps to look at what came before. Conventional retirement planning calls for diversification of a mutual fund or managed account portfolio across a range of standard asset classes. This diversification is designed to reduce risk by investing in financial instruments with low correlation — each expected to react differently to the same market conditions. When economic conditions cause one asset class to perform poorly, investors hope another is doing well. Targeting an asset allocation of stocks vs. bonds based on a client's risk tolerance is a basic example of this principle.

Enter Modern Portfolio Theory (MPT), pioneered by Harry Markowitz in his paper, "Portfolio Selection," published in 1952 in the *Journal of Finance*. MPT guides investors to construct an efficient frontier of optimal allocations that offer the maximum expected return for a given level of market risk. Over the years, MPT has come to serve as a cornerstone of financial risk management. Armed with this theory, an advisor helps clients evaluate portfolio risk as a whole across an "efficient frontier" of allocations, rather than looking at each individual investment within a financial plan. The result is a better look at the portfolio's risk and reward.

To help determine the efficient frontier, a Monte Carlo simulation across many possible future scenarios is typically developed, and the mean return and standard deviation of returns, or risk, are analyzed. Another statistical metric for this analysis, the Sharpe ratio, or risk-adjusted return, is commonly calculated to help clients understand just how volatile their portfolio may be and whether expected return adequately compensates them for taking additional risk. By optimizing return for a given level of risk across the asset allocation, investors work to manage potential downside and increase potential upside.

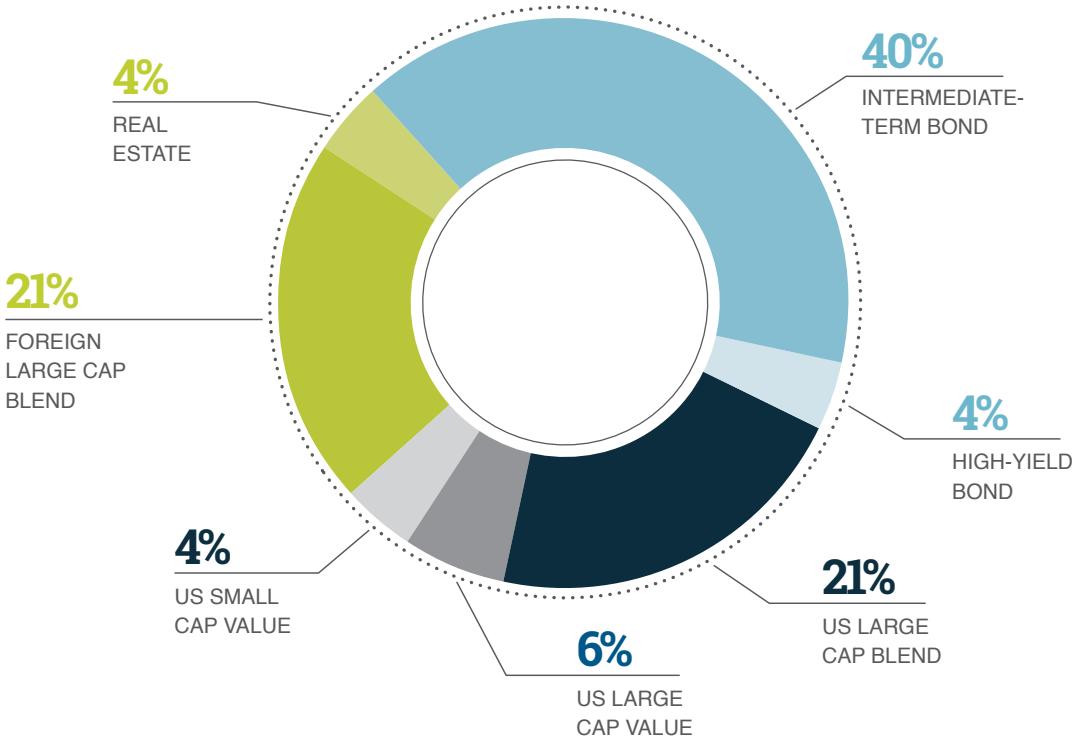


Sharpe ratio is the average return earned — per unit of risk — in excess of the risk-free rate, where risk is the volatility or standard deviation of returns. By subtracting the risk-free rate from the mean return, the Sharpe ratio helps isolate the investment performance associated with taking on extra risk. For a portfolio of no-risk investments like U.S. Treasury bills, on which the expected return is the risk-free rate, the Sharpe ratio equals zero. For other investments, the greater the Sharpe ratio, the more attractive the risk-adjusted return. Sharpe ratio greater than 1.0 is typically considered reasonable.

In Portfolio 1 below, we look at this analysis for an optimized allocation across standard asset classes and a Monte Carlo simulation using forward-looking assumptions across 10 years and 10,000 scenarios. These allocations fall in line with a moderate risk-oriented, passively managed portfolio. Consider how diversification across traditional asset classes helps this portfolio deliver reasonable and modest expected return for a seemingly low level of risk.

PORTFOLIO 1: INVESTING USING TRADITIONAL ALLOCATION

Risk Tolerance:	Moderate
Investment Style:	Passive Only
Starting Value:	$100,000



AFTER 10 YEARS

Average Return:	4.47%
Standard Deviation:	9.57%
Ending Value:	$154,947
Sharpe Ratio:	0.47

While many investors can reach their long-term goals with a well-diversified portfolio like this, there are important points to remember: **Use of MPT cannot protect a portfolio against catastrophic loss, and the potential benefits of MPT depend upon an investor remaining invested.**

Yet MPT is the industry's tried-and-true standard. It's easy to model and offers a way to evaluate results across many possible outcomes. It is a reasonable and efficient way to manage a client's money. But what it lacks is a method to truly address the most substantial risks of investing. More specifically, it offers no protection from behaviors that lead to sub-optimal performance, and no guarantee retirement savings will actually survive retirement.

Assumes annual rebalance using forward-looking capital market assumptions for Monte Carlo analysis across 10,000 scenarios. Does not include applicable platform and investment management fees. Hypothetical examples are for illustrative purposes only and do not represent any specific annuity or investment.

Alternatives for the Risk-Averse

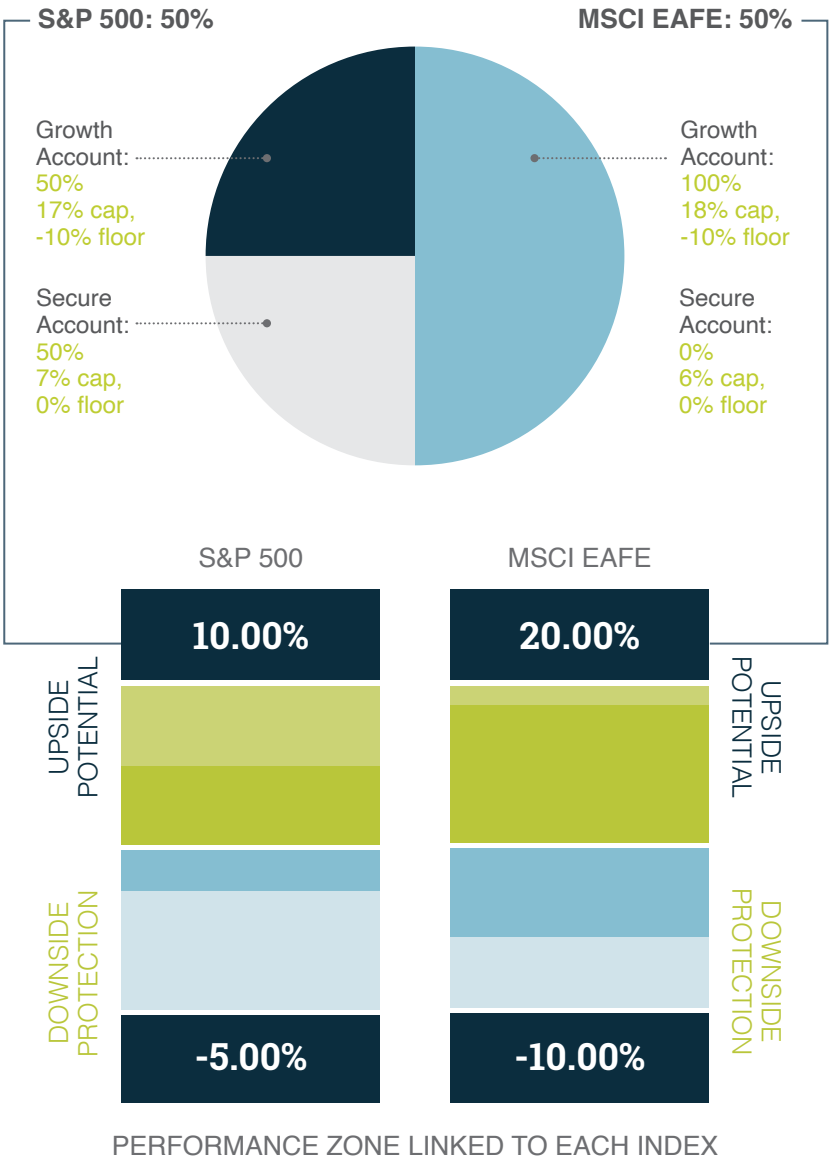
Over the years, this lack of protection in a standard diversified portfolio has caused many investors to look elsewhere. Whether in the form of certificates of deposit (CDs), traditional fixed annuities or other guaranteed investments, the risk-averse often find they can't stomach the potential for unexpected and significant loss that can come from even the most well-constructed portfolio. They move to the sidelines and shift from being investors to savers. The result is low rates and limited growth.

ENTER RISK CONTROL

Today, there is a new choice that can take clients further. Risk control accounts within a deferred annuity allow investors to link performance to a selected equity index and customize their own loss limit, between 0% and -10%. Investors set this personal limit by blending allocations to two separate risk control accounts. The secure account offers guaranteed principal protection and a cap on upside earnings. The growth account sets a loss limit of -10% in exchange for a higher cap. Gone is the lower earnings potential of fixed rate investments. By taking on a personalized amount of downside risk, clients with risk control can share in higher potential returns.

Gone is the lower earnings potential of fixed rate investments.

SAMPLE RISK CONTROL ACCOUNTS



PERFORMANCE ZONE LINKED TO EACH INDEX

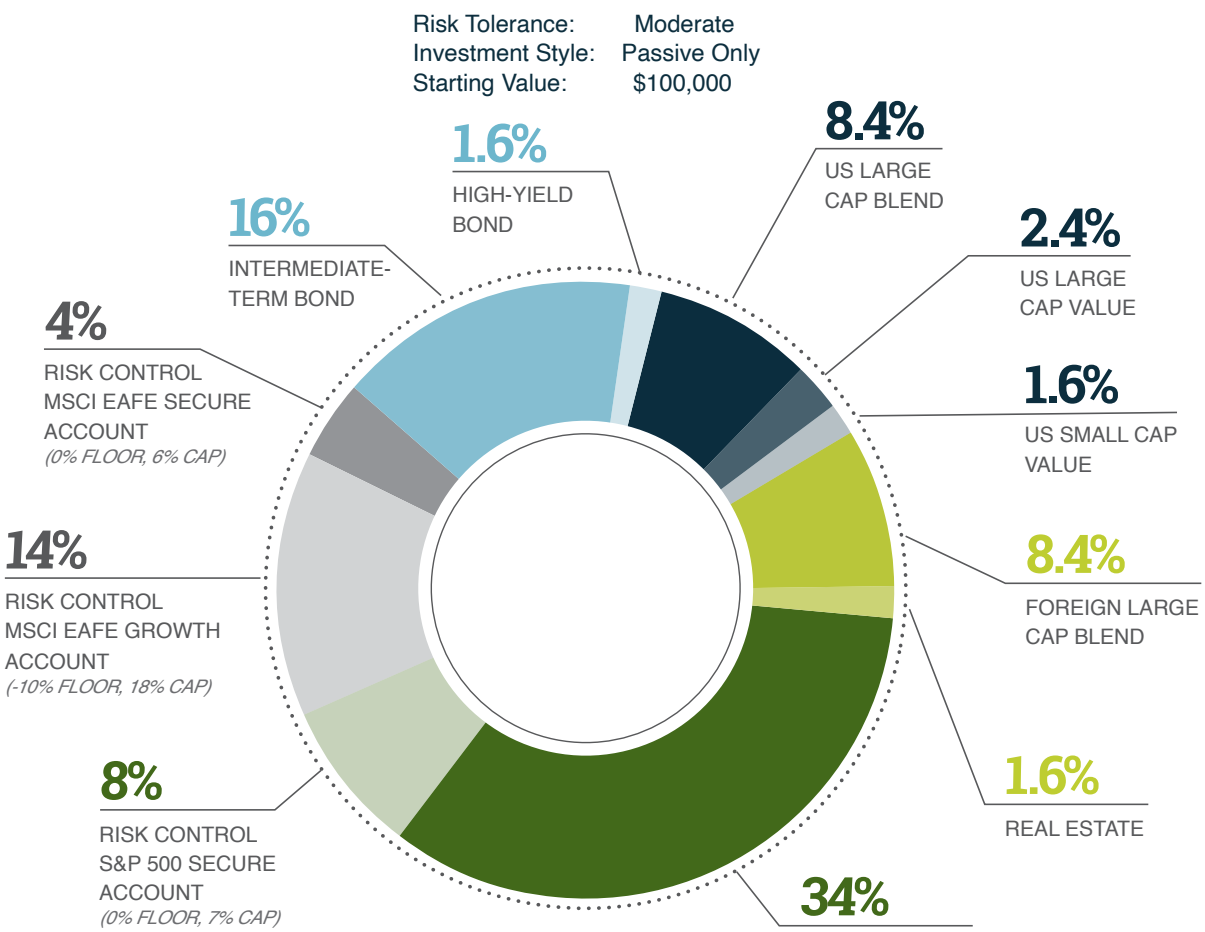
Risk control accounts let investors decide how much loss they're willing to tolerate. Then, with the knowledge that a portion of their assets are protected from unlimited loss, they can invest the remainder of their portfolio more aggressively.

Risk-averse savers no longer have to stay on the sidelines. They can access equity-linked returns while also guaranteeing downside protection uniquely tailored to their situation. This allows clients to remain invested during market turbulence without the worry of taking the full hit of a correction, while still reaping the benefits of a recovery. And they can experience the potential of full market exposure — even international markets — for a portion of their assets, while remaining confident another portion of their savings are protected.

Let's look again at our moderate risk-oriented investor's portfolio, but this time adding risk control accounts as a new asset class.

PORTFOLIO 2: INVESTING WITH RISK CONTROL

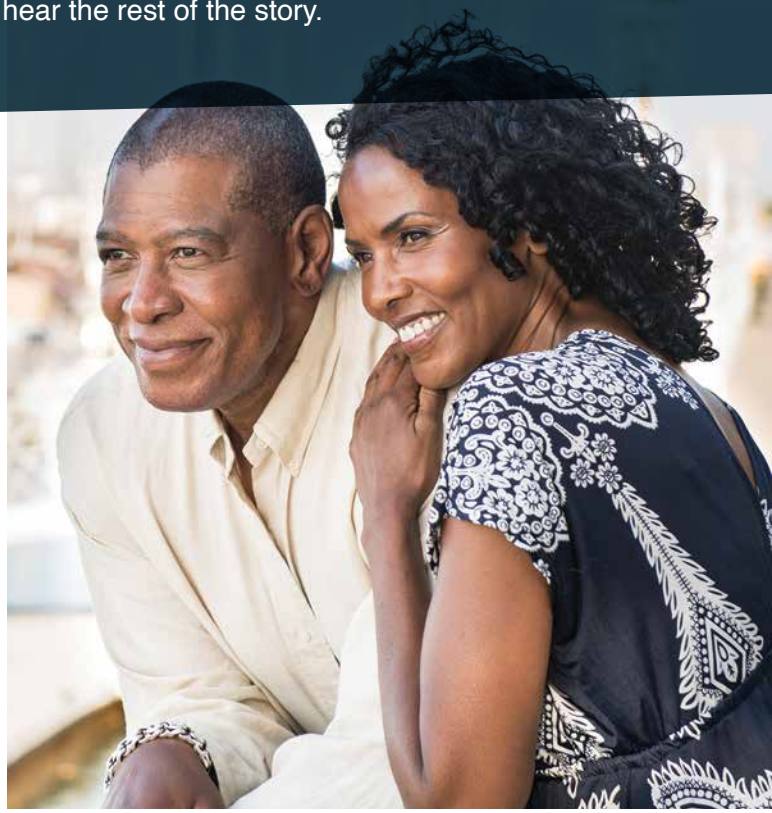
Risk Tolerance: Moderate
Investment Style: Passive Only
Starting Value: $100,000



AFTER 10 YEARS
Average Return: 3.39%
Standard Deviation: 8.92%
Ending Value: $139,649
Sharpe Ratio: 0.38

Assumes annual rebalance for all accounts except risk control. Risk control accounts have annual rebalance within each index, but rebalance with the entire portfolio every 5 years. Assumes forward-looking capital market assumptions for Monte Carlo analysis across 10,000 scenarios. Does not include applicable platform and investment management fees. Hypothetical examples are for illustrative purposes only and do not represent any specific annuity or investment.

Let's assume both individuals remained invested over the 10-year period, and now let's compare some of the key statistics between these two portfolios, looking specifically at the impact on risk and return. But before you question the value of risk control in this comparison, wait to hear the rest of the story.



PORTFOLIO COMPARISON

Risk Tolerance: Moderate
Investment Style: Passive Only
Starting Value: $100,000

	Portfolio 1 Traditional Allocation	Portfolio 2 With Risk Control
Stock/bond mix	56%/44%	82%/18%
Ending value after 10 years	$154,947	$139,649
Sharpe Ratio	0.47	0.38
Average return	4.47%	3.39%
Standard deviation	9.57%	8.92%

Assumes annual rebalance for all accounts except risk control. Risk control accounts have annual rebalance within each index, but rebalance with the entire portfolio every 5 years. Assumes forward-looking capital market assumptions for monte carlo analysis across 10,000 scenarios. Does not include applicable platform and investment management fees. Hypothetical examples are for illustrative purposes only and do not represent any specific annuity or investment.

In this case, using risk control decreases return but also the standard deviation of returns — the volatility or estimated risk of the portfolio. So, adding risk control into a portfolio reduces risk and that also lowers expected return. Makes sense. But these numbers just don't seem that compelling. Why? Because these numbers don't tell the full story.

GOING BEYOND DIVERSIFICATION

To tell the real story of risk control, we need to break out of the old narrative and highlight two important points. First, we must recognize that traditional metrics were designed under a traditional retirement planning paradigm. A critical assumption of this paradigm is that an investor always adheres to the chosen allocation strategy. As a result, the Sharpe ratio can then assume investment results for the portfolio will follow a normal distribution, or what's commonly thought of as a bell curve mean and variance distribution. For Portfolio 1 with a traditional allocation, normal distribution does apply.

But our Portfolio 2 with risk control works differently. Because of the caps and floors on the risk control accounts, the distribution for Portfolio 2 is skewed. So, comparing results between the two portfolios becomes a proverbial case of apples and oranges. Traditional metrics rely upon assumptions that can fail to recognize the breadth of available information and possibilities.

Additionally, traditional retirement planning lacks the ability to address many of the real risks associated with investing — the risks that can and should keep retirement investors up at night. Those risks drive investors from the markets to the sidelines. Three of the biggest are:

1. **Tail risk** is the possibility that an investment will move beyond three standard deviations from the mean. These are the "black swan events" no one expects. Tail risk events get investors' attention, so much so that we name them as they burn into our collective memory. Black Monday, the Tech Bubble, the Financial Crisis of 2008.

> Risk control accounts remove **tail risk**. Extreme losses beyond the limit set by the investor are simply erased by the downside guarantees.

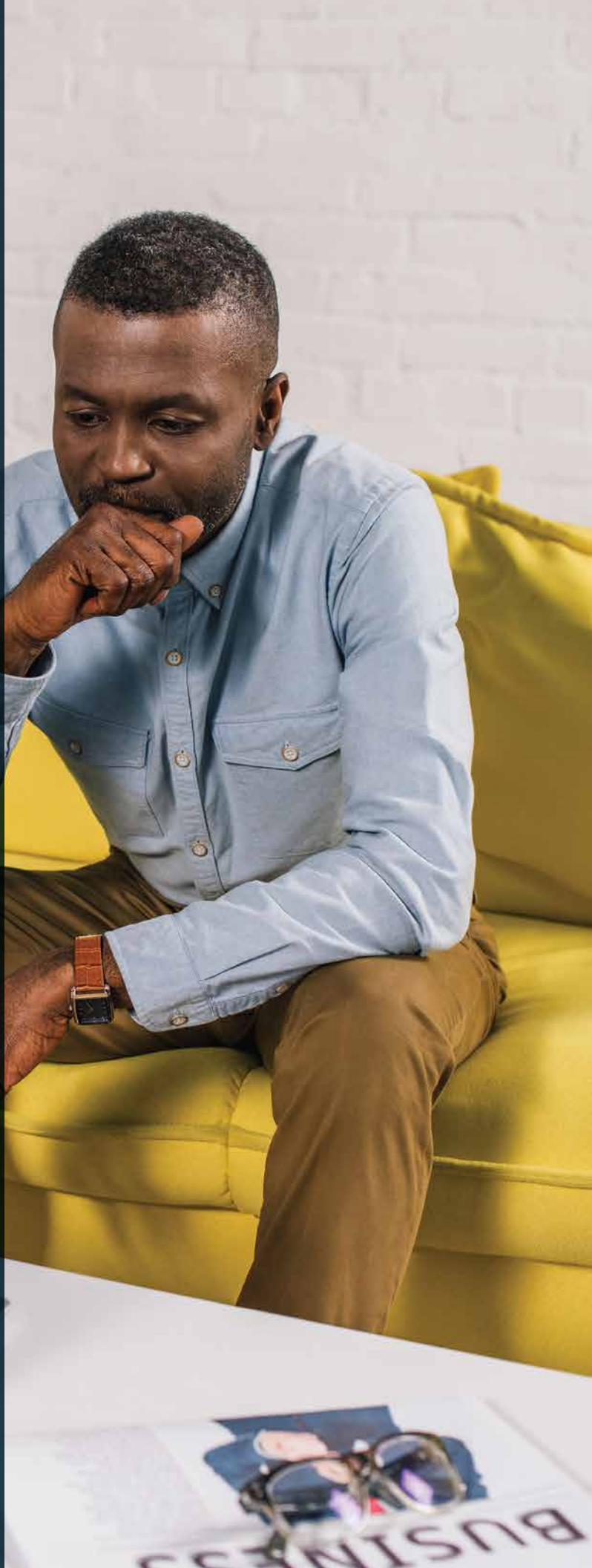
2. **Drawdown risk** is the measure of how long it takes for an investment to recoup its losses after it falls from a previous high. For example, if a mutual fund reaches $60 a share and then pulls back to $35 during a market correction, drawdown measures what it takes for the fund to reach $60 again. Drawdown risk is calculated as the low (trough) value minus the high (peak) value divided by the peak. In other words, how far you fell compared to how high you started. So, while standard deviation measures volatility of returns — ups and downs — drawdown focuses on the negative half of standard deviation. Just the downs.

Drawdown risk becomes increasingly relevant as investors approach retirement. But facing only the negative side of standard deviation just when they need the dollars most can be devastating. So, while other technical indicators — beta, alpha, r-squared and the Sharpe ratio — all serve as analytical tools to quantify and categorize traditional investment characteristics, drawdown risk provides a real-world measure of the impact of severe loss.

Risk control mitigates **drawdown risk**. In 2008, our Portfolio 1 had a drawdown of -20.79%. Meanwhile, Portfolio 2's drawdown was only -13.17%. That's a reduction in drawdown risk of over 37%, thanks to risk control. More assets are preserved when risk control is part of the portfolio, so fewer gains are necessary to recoup losses.

3. **Sequence of returns risk** refers to the possibility that the inevitable down market years will happen at exactly the wrong time — once retirement begins and clients start to tap their savings. When a portfolio experiences a dramatic drop during the accumulation years, the effects of extreme loss can be overcome over time. But as investors approach and live in retirement, those same losses experienced during the early years of distribution can quickly become catastrophic. Market losses on top of regular withdrawals can compound to the point where a portfolio simply can't keep up.

Risk control eases **sequence of returns risk** too. With protection against dramatic loss no matter when it might occur, investors ready to tap savings for income don't have to worry they are drawing from a weakened portfolio.



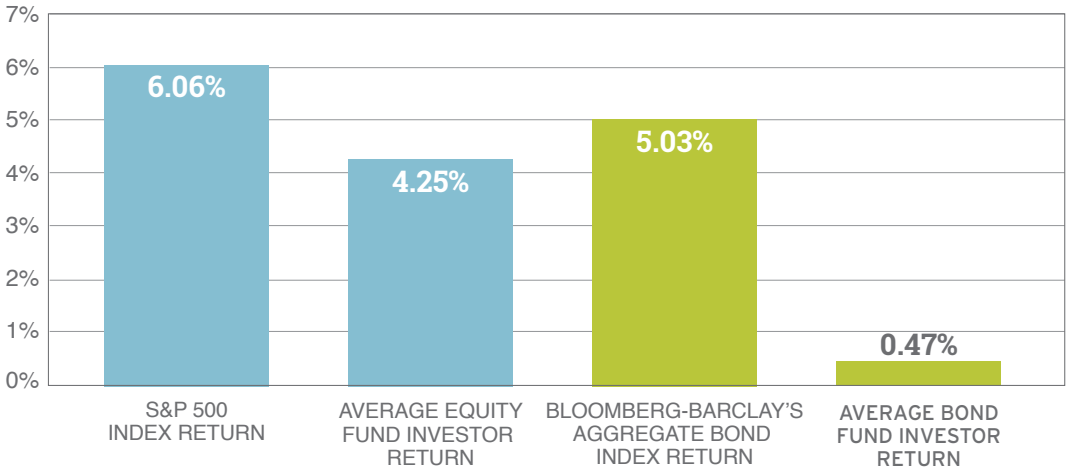
Human Nature

Lastly, let's not forget human nature — perhaps the most powerful risk factor of all. And, once again, one that Modern Portfolio Theory ignores. Regardless of what the math demonstrates, few individuals have the resolve to stay invested through the stomach-churning drops of normal market cycles, or resist chasing the latest headline-grabbing growth opportunity.

Year after year, DALBAR's Quantitative Study of Investor Behavior reveals how human nature results in underperformance.[1] In the graph below, returns for the last 20 years for the S&P 500 Index averaged 6.06%, compared to the average equity fund investor's earnings of only 4.25%. That's underperformance of 1.81% each year. The difference was even more dramatic for fixed income. Bloomberg-Barclay's Aggregate Bond Index averaged 5.03% over the last 2 decades. Meanwhile, the average fixed income fund investor saw just 0.47%, underperformance of 4.56% and not enough to keep up with inflation. Not nearly enough.

INVESTOR BEHAVIOR

Average 20-year return, 2019



NOTE: Inflation over this period averaged 2.14%, in case client wishes to add a bar in this graph.
SOURCE I DALBAR, Inc., Quantitative Analysis of Investor Behavior, 2020.

DALBAR attributes this underperformance in part to ineffective attempts to time the market. Panicked investors sell when the market drops, and then return too late to reap the full rewards of recovery. Investor behavior is the strongest argument for incorporating risk control into retirement planning. As the science of behavioral finance demonstrates, cognitive bias often leads to deviations from logic and reason when making investment decisions.[2] The DALBAR study even goes so far as to recommend advisors specifically target solutions that help investors manage anxiety. Risk control accounts can be one of those tools to help protect investors from, arguably, their portfolios' biggest risk factor — themselves.

When you combine investor behavior with the triple threat of tail, drawdown and sequence of returns risks, it's time to look past traditional analytics and address a more complete picture. When the market plummets, investors can almost expect to fall prey to their natural impulses for flight. Whether they do ultimately return from the sidelines or not, it's likely long-term returns will suffer. Adding risk control to a portfolio could provide the security needed to weather volatile markets and benefit from long-term growth.

Trying To Time The Market

To reinforce the need for a more complete analysis which incorporates risk control, let's look at our two portfolios one more time. But now, let's add the element of investor behavior and market timing to Portfolio 1 — the traditional portfolio without risk control – and revisit the Financial Crisis of 2008 and its aftermath. We'll assume the following:

- Our **Portfolio 1A investor**, without risk control, remains invested through 2008 and beyond.
- Our **Portfolio 1B investor**, without risk control, changes allocation strategy once losses in the portfolio reach -10%. This investor moves dollars to the sidelines in a money market account and stays there.
- Our **Portfolio 1C investor**, without risk control, also pulls out into a money market once portfolio losses hit -10%, but reinvests according to original allocations in 2013 once the market has essentially recovered.
- Our **Portfolio 2A investor**, this time with the comfort of risk control, remains invested through 2008 and beyond, just like Portfolio 1a.

PORTFOLIO PERFORMANCE

		PORTFOLIO 1 TRADITIONAL ALLOCATION			PORTFOLIO 2 WITH RISK CONTROL
		1A (NO RISK CONTROL)	1B (-10% THRESHOLD)	1C (-10% THRESHOLD)	2A (RISK CONTROL)
		Remains invested through 2008 and beyond	Exits the market in 2008 and stays on the sidelines	Exits the market in 2008 but returns in 2013	Remains invested through 2008 and beyond
END OF YEAR	MARKET PERFORMANCE				
		$100,000	$100,000	$100,000	$100,000
2006	14.77%	$114,769	$114,769	$114,769	$113,858
2007	5.45%	$121,027	$121,027	$121,027	$119,696
2008	-20.79%	$95,863	$95,863	$95,863	$103,931
2009	20.72%	$115,724	$96,019	$96,019	$121,825
2010	11.67%	$129,230	$96,144	$96,144	$134,434
2011	1.21%	$130,790	$96,217	$96,217	$133,200
2012	11.79%	$146,212	$96,286	$96,286	$149,147
2013	14.53%	$167,450	$96,335	$110,273	$171,374
2014	6.47%	$178,290	$96,367	$117,411	$181,934
2015	-0.50%	$177,401	$96,394	$116,826	$180,393
ANNUAL RATE OF RETURN		**5.90%**	**-0.37%**	**1.57%**	**6.08%**

Assumes annual rebalance for all accounts except risk control. Risk control accounts have annual rebalance within each index, but rebalance with the entire portfolio every 5 years. Hypothetical examples are for illustrative purposes only and do not represent any specific annuity or investment. Past performance does not guarantee future results.

The Portfolio 1a investor ended up doing well. But, remember, the DALBAR results argue that this behavior could be considered atypical for the real world. On the other hand, Portfolios 1b and 1c exhibited more typical behavior — panicking and running to the sidelines. Both of these portfolios suffered as a result. Then there's Portfolio 2a. Armed with the downside protection of risk control, this investor rode out the volatility and ended up recouping all losses and earning an average of 5.95%. That's greater than the fully invested Portfolio 1a earned without risk control.

Furthering The Story

Before we close the book on risk control, however, it's time to tell one last tale. It's the tale of market cycles and how different conditions provide different ways to appreciate the value of risk control. Let's consider how the versatility of risk control could have played a role during two of the more recent bear markets.

TECH BUBBLE (1999 – 2002)

INTEREST RATES

INTEREST RATES were much higher relative to current levels. Therefore, fixed income in a standard 60/40 stock/bond portfolio had room to serve as a reasonable hedge during these years of significant equity market correction.

CORRELATION

CORRELATION among asset classes was lower during this time, so traditional diversification still offered solid benefits during this bear market.

FIXED INCOME

FIXED INCOME allocations were able to help hedge against stock losses, and the Bloomberg-Barclay's Aggregate Bond Index returned 12%, 8% and 10% during the calendar years 2000-2002.

EQUITIES

EQUITIES – both domestic and international – took significant drops, with the S&P 500 falling -10%, -13% and -23% in 2000-2002. The MSCI EAFE dropped -15%, -23% and -18% during the same time.

Risk control accounts could have helped serve as an equity replacement during the Tech Bubble. Their guaranteed protection would have helped investors avoid dramatic losses and stay invested so they could participate in the subsequent recovery. In fact, in that next year (2003), the S&P 500 returned 26% and the MSCI EAFE returned 35%. Bonds returned only 4%.

FINANCIAL CRISIS (2008)

INTEREST RATES

INTEREST RATES were at all-time lows during the crisis, significantly limiting the ability of U.S. bonds in a 60/40 stock/bond portfolio to serve as an equity hedge. (The Fed had taken the stance that negative interest rates were not a monetary policy tool they would pursue.)

CORRELATION

CORRELATION across asset classes, particularly equity and fixed income, was much higher. That dramatically reduced the benefits of traditional diversification.

FIXED INCOME allocations were not able to provide a substantial hedge against stock losses, given the low rate environment. The Bloomberg-Barclay's Aggregate Bond Index returned 5% in 2008.

FIXED INCOME

EQUITIES saw the bottom fall out. The S&P 500 plunged -39%, while the MSCI EAFE fell -45% during that same year.

EQUITIES

Risk control accounts during the Financial Crisis could have helped replace fixed income and leverage equity exposure. Their loss limits would have allowed investors to avoid the historic downturn in both domestic and international markets for 2008, and enjoy the recovery that followed. In 2009, the S&P 500 returned 24% and the MSCI EAFE returned 28%, while bonds returned under 6%.

The Value Of Risk Control

In both of these cases, guaranteed downside protection through risk control accounts would have helped manage the volatility of the portfolio and potentially keep investors in the market. While conditions were different each time, one thing remained constant. Risk control accounts could have provided the protection needed for better long-term results.

A paper published by S&P Dow Jones Indices supports this conclusion. In "A Performance Analysis of Variable Annuities with Risk Control," researchers back-tested 20 years of data. They concluded that variable annuities with risk control features may improve the predictability of cash flows by capping and flooring the price performance of underlying instruments.[3]

The Next Chapter

The traditional narrative of retirement planning is incomplete. Modern Portfolio Theory and the standard metrics don't tell the full story, and investors deserve a broader approach. Risk control accounts can empower investors of any risk tolerance level to make their own decisions and set loss limits based on their own goals. Adding a risk control asset class to a portfolio offers investors opportunities to leverage up their equity exposure without changing overall risk exposure. That means clients are no longer limited in their growth potential or relegated to the sidelines during volatile markets. Risk control accounts can help improve the potential for better long-term returns. With risk control, savers can once again become investors.

At CUNA Mutual Group, we're continuously innovating to bring risk control solutions to every investor. Variable annuities with risk control accounts may help improve the portfolio performance for clients and break down the barriers to financial security. It's time to reevaluate the story of investing and turn to the next chapter. The future of retirement planning is risk control.

SOURCES

[1] DALBAR, Inc., Quantitative Analysis of Investor Behavior, 2020.
[2] The European Financial Review, How Biases Affect Investor Behaviour, H. Kent Baker and Victor Ricciardi, February - March 2014.
[3] S&P Dow Jones Indices, A Performance Analysis of Variable Annuities with Risk Control, September 2016

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