RESEARCH NOTE

Spread Your Bets

Benchmark caps vs. custom index crediting over the long term

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Executive Summary

- Stock market returns are rarely “average” - big up years drive long-term performance and annual caps often limit participation in those gains.
- Based on nearly a century of simulated performance, custom indices with volatility control consistently delivered higher annual payoffs than capped benchmarks.
- Equity and multi-asset custom strategies showed their greatest advantage over caps in the years following stock market declines.
- Spreading allocations across benchmark caps and equity and multi-asset custom indices can be a smart and easy way to improve the odds of crediting success across always changing market conditions.

Sales of principal-protected fixed indexed annuities (FIAs) topped $125 billion in 2024.[1] A large majority of these use annual point-to-point crediting linked to the leading US equity benchmark, typically with a cap.

What is the appeal of the cap? For one, they are simple to explain. The payoff is directly tied to the performance of the well-known US benchmark index that anyone can see on TV or their phone every day. If the cap is 9% and the index only rises 4%, the payoff is 4%. If the index rises 17%, your return is limited to 9%. And if the index is negative, your return is 0%.

The alternative is a *custom index* with volatility control. It rebalances daily (or even intraday) with non-interest bearing cash to target an annualized volatility level.[2] This dampens swings when market moves heat up. The trade-off is some reduced exposure in high-vol periods while remaining uncapped to the upside via a participation rate.

[1] LIMRA. https://www.limra.com/en/newsroom/news-releases/2025/limra-2024-retail-annuity-sales-power-to-a-record-$432.4-billion/
[2] Most volatility-controlled indices are *excess return*, deducting a risk-free rate such as the Effective Federal Funds Rate (EFFR) from daily returns to help neutralize the impact of changing interest rates on option pricing. The excess return index must return more than this risk-free rate to begin crediting but benefits from a lower and more stable price for the option hedging the index.

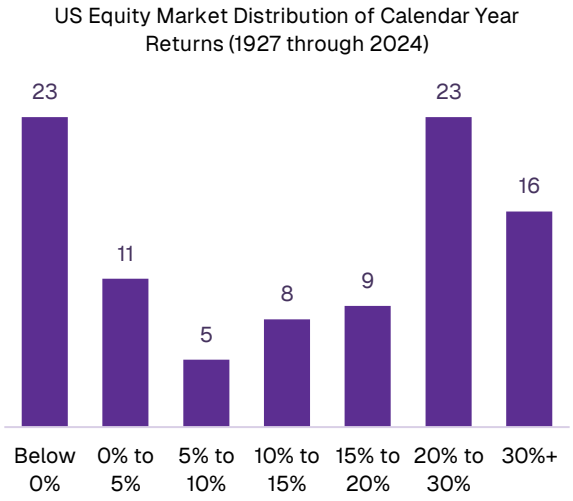
Custom indices with volatility control can often deliver higher participation. They also show more stable pricing at renewal compared to benchmark indices with no volatility control. Caps can reset sharply lower as interest rates fall and volatility rises. A 9% cap one year can drop to 5% the next. Participation with custom indices is typically more consistent across renewals.

Is the simple, capped exposure to the benchmark better than a custom alternative that offers uncapped upside? One of the drawbacks of custom indices is they can drift from the plain vanilla benchmark. This can happen when volatility control cuts exposure during high-volatility rallies or when other assets in the index such as bonds, gold, or commodities perform differently. If the stock market is up and the custom index is flat or down in the short term, this can frustrate agents, advisors, and clients.

Over time, diversifying across capped and uncapped indices can improve the chances of earning consistent credits and managing expectations. This research note demonstrates how each type of strategy fared historically, simulating equity-only and multi-asset custom index payoffs against the capped benchmark over nearly 100 years of market history.

Stock market returns are "lumpier" than you think

Since 1927, the U.S. stock market has averaged an 8.8% return per year, including dividends.[3] On the surface, a 9% cap looks very attractive and is similar to the long-term average while including the benefit of downside protection in an FIA. But averages can be misleading. To reach 8.8%, investors need full participation in big up years to offset the inevitable declines.



Source: Kenneth French Data Library, Salt Financial

Historically, the US market:

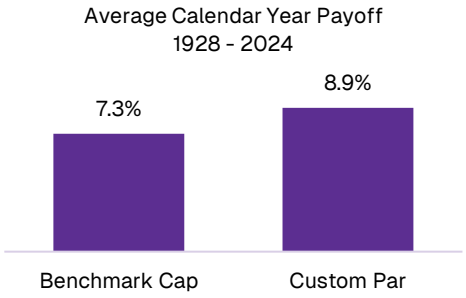
- Increased <10% in 17% of the years (16 of 96).
- Fell about one-quarter of the time (23 of 96).
- Surged 20%+ in ~40% of years (39 of 96).
- Gained 10%+ in 60% of years (56 of 96).

[3] For our analysis, we use the high-quality research data published by renowned finance professor Kenneth French and used by many academics for long-term US equity research (https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html). The Fama-French daily series of US stock market returns on the site includes all available listed equities weighted by market cap, similar in structure to a modern total US market index.

Put differently, almost **80%** of the positive years in the market since 1927 would have hit a cap set at 10%.

Custom index payoffs outperform over the long term

Standard FIA illustrations back-cast current rates onto historical returns, which can sometimes be misleading. For this very long-term analysis, we use an identical equity underlier in two forms: one plain vanilla and the other with very basic volatility control. We then simulate annual payoffs, using market-based budgets, caps, and participation rates from 1928 through 2024.[4] This better mimics real renewal conditions as rates and volatility change.



Source: Kenneth French Data Library, Salt Financial

In our dynamic simulation, the custom index with volatility control and participation averaged an annual payoff of 8.9%. The same underlier without volatility control and a capped return averaged 7.3%. Using a traditional static back-cast method for comparison, a 9% cap generated 6.2%, versus 8.3% for the custom index. Either way, the custom index strategy captured more uncapped returns and delivered more consistent results across changing levels of interest rates and volatility.

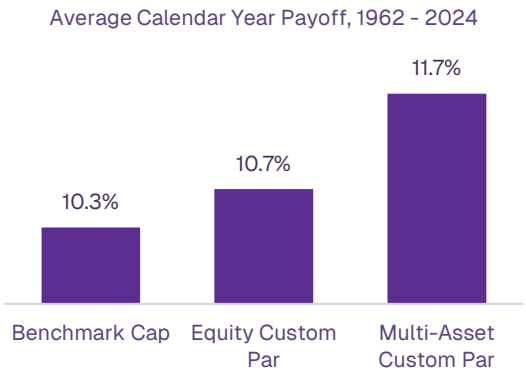
Diversification of asset classes and index types can boost returns

Adding bonds as an asset to custom indices improved pricing and crediting during the years of unusually low rates after the Great Financial Crisis. But when bonds sold off in 2022, they dragged down many multi-asset strategies that relied on them for pricing and cushioning. However, short-term moves can be noisy, so the benefit of diversification tends to show its true value over longer horizons.

We then tested a simple multi-asset mix of U.S. stocks and 10-year Treasuries to highlight the benefits of diversification. The stock exposure is the same underlier used in the benchmark cap and custom

[4] The "custom" index is created by using the same Fama-French daily returns as before and applying a volatility target of 10%, rebalancing with cash, and subtracting a risk-free rate (1-month Treasury bill rate) to make it excess return. A very simple maximum of 40-day or 60-day historical daily volatility is used for the volatility targeting. The analysis pre-dates the development of modern option pricing theory, but we use a Black-Scholes framework historically using a realized volatility approach with a persistent volatility risk premium during normal markets and more rapidly mean-reverting volatility in more turbulent markets, closely approximating available historical market option pricing in more recent times. The pricing on the options forward and discounting use historical risk-free rates. Options on the custom index are priced with a static implied volatility offer and borrow cost using historical risk-free rates. The option budgets are estimated at 1% premium to the 1-month T-Bill prior to 1963 (from Fama-French) and a 1% premium to the 10-year US Treasury Note thereafter (FRED). We apply constraints of a 50% maximum on estimated caps and a minimum 1.25% options budget for both benchmark and custom payoffs.

equity-only index. We applied the same dynamic method of simulation as before but limited the sample to 1962–2024 due to a more limited bond history.[5]



Source: Kenneth French Data Library, Salt Financial

As in the full period, the equity custom index payoff outperforms the benchmark cap, but the multi-asset custom index did even better, outperforming the cap by 1.4% per year.

Annuities are long-term products, but short-term results can still cause some angst. A stretch of weak bonds or a lagging custom index can be discouraging and lead to lower credits in the short run. A 60-year back test offers context, but how do you manage expectations across different rate, volatility, and inflation regimes? To address this, we calculate payoffs across specific economic conditions as well as test a simple basket allocation compared to the individual strategies.

Calendar Year Average Payoffs - 1962 to 2024[6]				
	Caps	Equity Custom Par	Multi-Asset Custom Par	Equal-Weight Basket
All Years	10.3%	10.7%	11.7%	10.9%
High Vol	1.4%	1.0%	5.6%	2.7%
Low Vol	12.0%	12.5%	12.9%	12.5%
Rising Rates	9.3%	9.4%	1.2%	6.6%
Falling Rates	14.0%	15.6%	28.2%	19.3%
High Inflation	10.9%	10.0%	11.4%	10.8%
Low Inflation	9.6%	11.4%	12.0%	11.0%
Prior Year Negative	11.4%	14.6%	17.8%	14.6%
Prior Year Positive	9.9%	9.3%	10.1%	9.8%

Source: Kenneth French Data Library, Salt Financial

Multi-asset custom indices outperformed in volatile markets but lagged when rates rose, as bonds weighed on returns. In low-volatility bull markets, all three strategies performed similarly. Inflation effects are mixed: benchmark caps did better in high inflation and equity custom indices in low inflation--even though both use the same equity underlier.

But there are two key points from this table that stand out. The first is that resets matter. After down years, FIAs reset to

[5] The multi-asset custom index uses the same construct as the equity-only custom index with respect to option pricing and market inputs. The strategy uses an inverse volatility weighting scheme to allocate daily between stocks and bonds along with the same 10% volatility target and is excess return. Prior to the 1982 introduction of Treasury futures, estimated futures returns are implied from the 10-year Treasury note yield.

[6] For the conditions we use the following thresholds to mark high/low/rising/falling: Volatility-US equity (Fama-French) average above or below annualized standard deviation of 20%, Rates – annual change of +50 bps (high) or -50 bps (low) over the year in 10-year Treasury yields, Inflation – above or below 3% CPI level. Prior Year Negative looks at the following year payoffs coming out of a down year for equities and vice versa.

zero, letting clients capture rebounds. Custom indices add pricing stability and often higher participation when markets tend to rise the most after big declines. By contrast, rising volatility and falling rates can make options more expensive and push caps lower, limiting exposure to these strong rallies.

The second is that the equal-weighted basket tends to be a consistent performer across all scenarios. Trying to time the index type to the market environment is a tall order so spreading across all three can be smarter over the long run. The basket approach captures multi-asset gains when volatility rises or rates fall but also holds up when rates climb by balancing falling bonds with benchmark cap and equity custom strategies. Equity-only cap and custom index participation strategies can also lead at different times despite sharing the same underlier, providing yet another case for index type diversification.

Our long-term simulation may be hypothetical but demonstrates how even very simple methods of controlling volatility can help improve payoffs versus caps. More modern approaches to volatility control available today that incorporate intraday data and processes have the potential to increase that advantage even further.

Conclusion

Decades of market history show the stock market is usually either strongly positive or negative but rarely generates single-digit annual gains. To outperform long term, participation in uncapped rallies is essential. Despite recent stumbles, equity and multi-asset custom indices with volatility control have historically outperformed capped benchmarks thanks to pricing stability and uncapped participation. Just as important, caps and equity/multi-asset custom strategies diversify each other, making allocations across all three a very effective long-term strategy.

Markets aren't zero-sum casino games — everyone can benefit from rising assets. But investing does share one casino lesson: playing the odds is the smartest long-term bet. In blackjack, one proven rule is to always split aces and 8s. You might lose a hand, but you don't abandon the strategy on a feeling. You stick with the edge that works over time.

Without a crystal ball, the closest thing to a free lunch in finance is diversification — across both asset classes and index types.[7] Spreading exposure among capped benchmark, equity custom, and multi-asset custom indices has the potential to reduce surprises, smooth crediting, and improve client satisfaction.

[7] Harry Markowitz, the Nobel prize-winning founder of modern portfolio theory that underpins a good portion of most investing today, famously quipped that "Diversification is the only free lunch in investing." Nearly everything else involves a trade-off.

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