S&P Dow Jones Indices

A Division of S&P Global

Index Education

Indexed Insurance: Embracing Volatility-Controlled Indices in Next-Generation Products

Contributors

Yuan Tian
Executive Director
Multi-Asset Indices
yuan.tian@spglobal.com

Phillip Brzenk
Managing Director, Global
Head of Multi-Asset Indices
phillip.brzenk@spglobal.com

Kelsey Stokes
Head of Financial Institutions
Sales, Americas
kelsey.stokes@spglobal.com

Executive Summary

Principal protected products that provide a stream of income, support accumulation or facilitate wealth transfer and legacy planning are playing an increasingly significant role within the global wealth management landscape. Because of this, index-linked annuity and life products have seen strong growth in recent years.

The S&P 500® has long been at the forefront of the indexed insurance market. However, market and interest rate volatility can create uncertainty in crediting rates within these products, thus creating a need for indices that employ volatility-control mechanisms that may offer more rate stability.

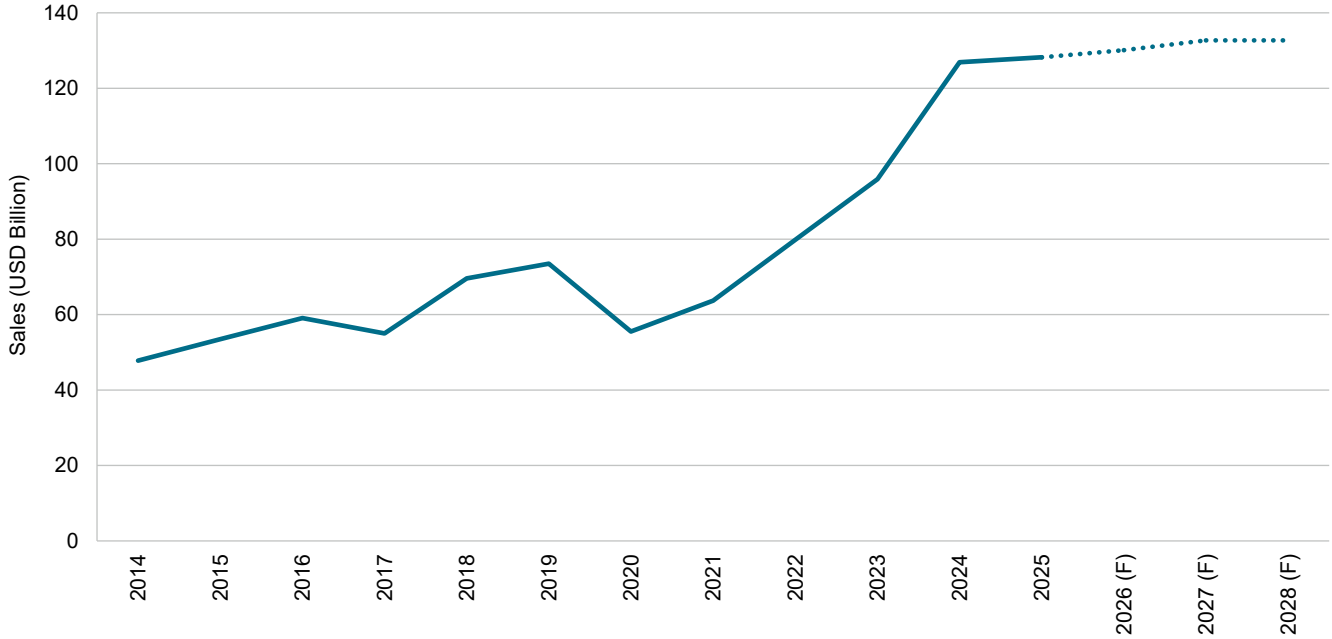
This paper will explore:

- The growth of volatility-controlled indices (VCIs) in tandem with the growth in the U.S. fixed indexed annuity (FIA) market—as well as the more recent growth of the APAC indexed universal life (IUL) market;
- How and why VCIs have performed across various market environments and navigated market volatility; and
- How VCI technology has evolved to meet the needs of modern markets.

Growth of the U.S. FIA Market and Rise of VCIs

The U.S. FIA market has seen meaningful growth. From 2014 to 2025, U.S. FIA sales grew from USD 47.8 billion to USD 128.2 billion—a compound annual growth rate of 9.4%—with 2025 marking the fifth consecutive year of annual sales growth. LIMRA has forecast FIA sales to reach all-time highs of USD 132.7 billion by 2028.[1]

Exhibit 1: U.S. Indexed Annuity Sales, Actuals and Forecast



Source: S&P Dow Jones Indices LLC. Data as of May 31, 2026. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

As the market for indexed annuities has grown meaningfully since the introduction of the FIA (in 1995)—which offered crediting based on the S&P 500—so too has the volume and complexity of the indices used within these products. Today, more than 200 VCIs are actively offered in the U.S. FIA market.[2]

VCIs[3]—also referred to as risk-controlled indices—are a category of indices that target a specified level of volatility by dynamically adjusting exposure between one or more risky assets (such as equities or gold) and a volatility dampener (such as cash or Treasuries). Unlike traditional benchmark indices that can be sensitive to market volatility, VCIs aim to deliver a smoother volatility profile over time. This stability may facilitate hedge efficiencies in principal protected insurance products, thus giving rise to VCIs' popularity in the U.S. FIA and IUL

[1] LL Global, Inc. U.S. Fixed Index Annuity Market Data and "A Future View of U.S. Annuity Sales—Annuity Surge Continues: U.S. Individual Annuity Market Forecast 2025-2028."

[2] "Salt Financial Annuity Index Report," June 2025.

[3] "Demystifying Volatility-Controlled Indices," S&P Dow Jones Indices.

market. S&P Dow Jones Indices (S&P DJI) pioneered the first VCIs in 2009, in the wake of the 2007-2008 Global Financial Crisis in response to the extreme volatility experienced during that time. The S&P 500 continues to be the world's most widely referenced equity index, serving as the foundation for many VCI strategies used in both the U.S. and international insurance markets. There is more than USD 35 billion in assets tied to S&P DJI VCIs in indexed insurance products, with FIAs driving most of that figure.[4] Examples of S&P DJI indices that are widely used in insurance products include the following.

- S&P MARC 5% Index
- S&P 500 Daily Risk Control 10% Index
- S&P 500 Dynamic Intraday TCA Index

Asia to Follow the U.S. Blueprint

The Asia-Pacific life insurance market had gross written premiums of approximately USD 1 trillion in 2022.[5] The life and annuity segment continues to grow, driven by demographic shifts that have increased demand for retirement and accumulation solutions. Early indicators of this demand include the growing number of mandates linked to S&P DJI VCIs and multi-asset index solutions. In the U.S., FIA products have heavily relied on VCIs, whereas in parts of Asia, adoption of VCIs has been primarily in IUL or savings-type products.

Recent regulatory changes across Asia have created a more favorable environment for IULs and have simultaneously made it easier for insurers to adopt VCIs as an underlying index. This shift has provided clearer frameworks for index-linked crediting strategies and has supported greater product innovation. As a result of these developments, IUL solutions have rapidly expanded across Asia, with multiple major insurers rolling out index-linked products in 2025. These moves demonstrate the local appetite for stable, innovative accumulation solutions that could be built using VCIs drafting behind the U.S. FIA blueprint.[6]

Volatility-Controlled Indices: Core Mechanics

A VCI works by monitoring the recently realized volatility of its underlying assets (e.g., the S&P 500) and adjusting exposure to maintain a target volatility level. When market volatility is low, below its target, the index can hold higher equity exposure (sometimes exceeding 100% through leverage, depending on its design). When volatility spikes above its target, the index reduces equity exposure—often shifting exposure into cash—to stay close to its volatility

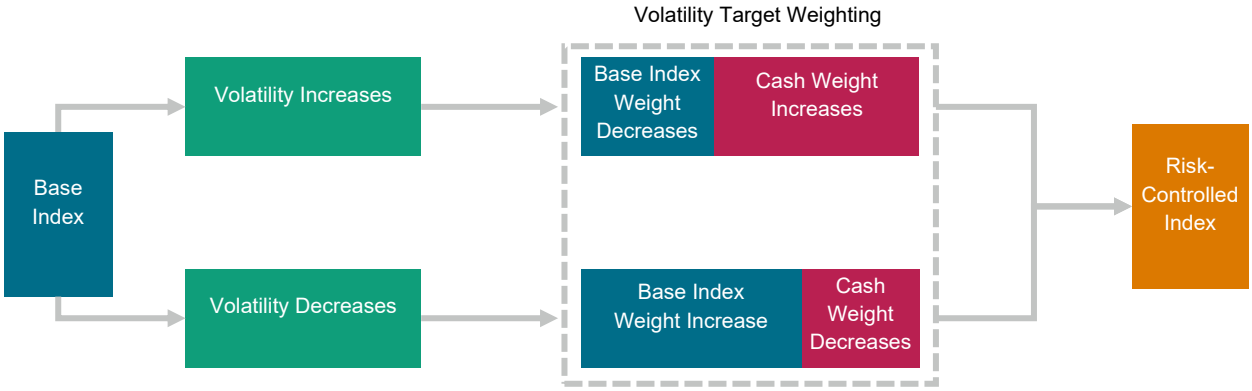
[4] Figure based on aggregate asset reporting received by S&P Dow Jones Indices as of December 2025.

[5] Asia-Pacific Life Insurance Market to 2027 - Research and Markets.

[6] The Insurance Pro Blog, "Volatility Controlled Indices in IUL: The Honest Breakdown," Sept. 23, 2025.

target. This rebalancing process occurs on a set frequency, often daily or intraday, helping the index respond to changes in market conditions.

Exhibit 2: S&P Risk Control Indices Framework



Source: S&P Dow Jones Indices LLC. Data as of March 31, 2026. Chart is provided for illustrative purposes.

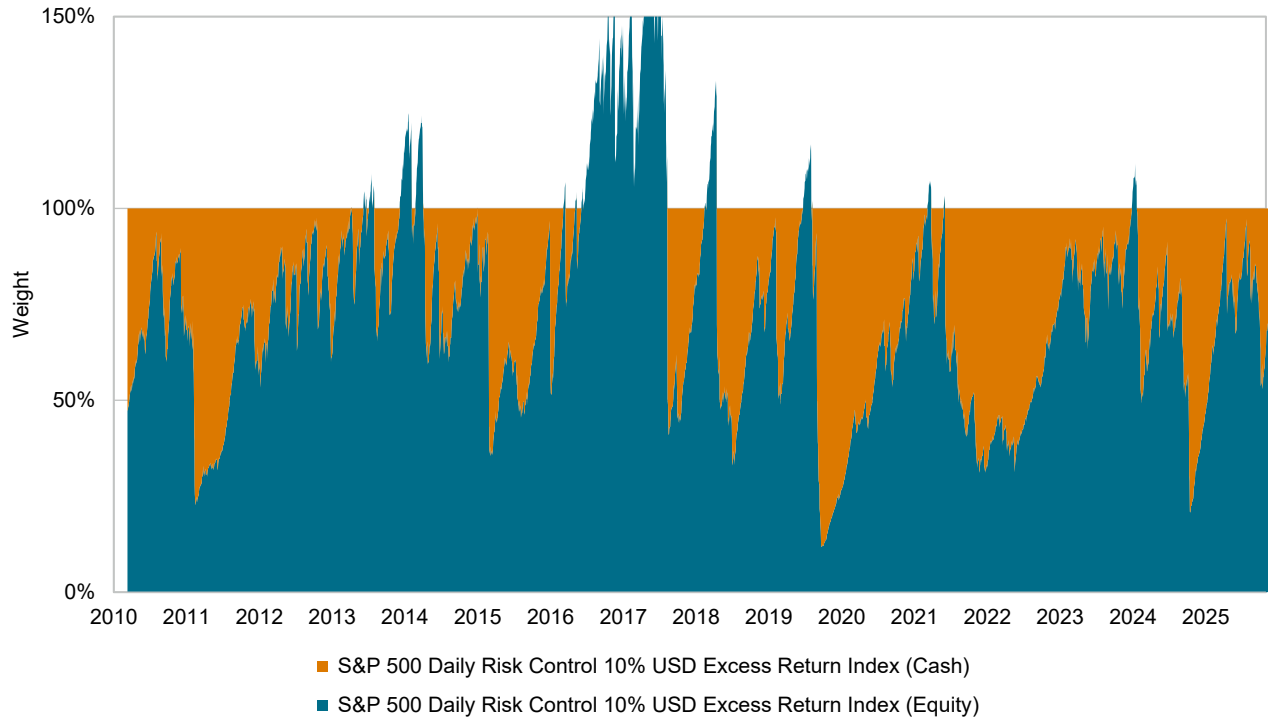
This dynamic risk/volatility-control mechanism serves two purposes for insurance products.

- **Performance smoothing and downside mitigation**: By cutting weights during high volatility (often drawdown) periods, VCIs can reduce maximum drawdown relative to their underlying benchmarks, helping insurance product pricing.
- **Hedging stability:** Lower and more stable realized volatility may translate into more consistent option costs, which can support more consistent cap rates or participation over time—reducing the need for frequent crediting strategy adjustments that can confuse distributors and clients.

Understanding VCI Performance during Different Market Cycles

To set realistic expectations for policyholders and distribution partners, it is important to understand how VCIs behave in different volatility regimes. While the long-term goal is smoother performance, it may still vary depending on market conditions. In this section, we use the S&P 500 Daily Risk Control 10% Index as an example to illustrate three distinct periods: a low volatility bull market (2017), a high volatility shock (2020 and 2025) and a moderate volatility environment (2023).

Exhibit 3: S&P 500 Daily Risk Control 10% Index Historical Weights



Source: S&P Dow Jones Indices LLC. Data from Sept. 1, 2010, to June 22, 2026. Index performance based on excess return in USD. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Low Volatility Regime: 2017

The year 2017 was characterized by low equity volatility and a steady upward trend in the S&P 500. Historically, when markets are calm, VCIs can operate at or near maximum allowable leverage. For most of 2017, the S&P 500's realized volatility was below 7%; since the index targets 10% volatility with a maximum leverage of 150%, it maintained exposure above 100%. Leveraged exposure in a bull market amplified gains; the index participated more in market upside, outperforming the underlying S&P 500 by ~8%.

Exhibit 4: S&P 500 Daily Risk Control 10% Index versus the S&P 500 in 2017

Average Daily Exposure to the S&P 500 (%)	S&P Daily Risk Control 10% Index ER (%)	S&P 500 PR (%)
137	27.70	19.40

Source: S&P Dow Jones Indices LLC. Data from Dec. 31, 2016, to Dec. 31, 2017. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Key Takeaway: In prolonged calm bull markets, VCIs could outperform their underlying benchmark, subject to the leverage cap. This "participation bonus" is regime-specific, not a permanent feature.

Moderate Volatility Regime: 2023

2023 serves as a prime example of a moderate volatility regime, where realized volatility (13%-18%) remained in line with long-term averages (the S&P 500's long-term volatility is around 15% to 18%). The year was shaped by persistent inflation, rate hikes and occasional geopolitical disruptions. In this environment, the S&P 500 Daily Risk Control 10% Index maintained partial equity weight, averaging 71% for the year. The 71% figure is the average daily equity weight over the year, not a fixed exposure, as the index varies exposure daily in response to realized volatility, typically reducing equity exposure during volatility spikes—which often coincide with market drawdowns—and increasing exposure only after volatility has begun to normalize. As a result, a simple 71% × S&P 500 annual calculation is not an appropriate way to estimate performance; because returns compound, when the index holds equity matters as much as its average exposure level, and the same average exposure can produce different outcomes depending on the sequence of returns and the timing of de-risking and re-risking.

In 2023, the S&P 500 Daily Risk Control 10% Index participated in most equity upside when market conditions were constructive, but its leverage didn't reach maximum levels due to ongoing volatility spikes and rapid sentiment shifts amid news flow.

Key Takeaway: In normal volatility regimes, VCIs have historically maintained partial equity exposure, delivering a smoother performance profile in exchange for some upside capture. The degree of that tradeoff depends on both market conditions and the index's own volatility target—a lower target (e.g., 5%) will result in less equity exposure and lower upside capture than a higher target (e.g., 10%) regardless of the environment.

Exhibit 5: S&P 500 Daily Risk Control 10% Index versus the S&P 500 in 2023

Average Daily Exposure to the S&P 500 (%)	S&P Daily Risk Control 10% Index ER (%)	S&P 500 PR (%)
71	11.50	24.20

Source: S&P Dow Jones Indices LLC. Data from Dec. 31, 2022, to Dec. 31, 2023. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

High Volatility Regime: March 2020 and April 2025

High volatility episodes are when VCIs most clearly demonstrate their core purpose—but also when realistic expectations matter most. Both 2020 and 2025 saw significant volatility spikes, making them an instructive case study.

March 2020 represents a classic high volatility scenario for VCIs. In particular, the market demonstrated how rapidly volatility can reprice; the implied volatility rose from "normal levels" to extreme readings within weeks during March 2020, reaching record highs.

Phase A – Drawdown/Volatility Spike: When realized volatility jumped above 40%, far exceeding the index volatility target, the S&P 500 Daily Risk Control 10% Index sharply reduced its equity exposure—to an average of approximately 20% in March 2020—weighting more to cash to move the strategy back toward the target volatility. This is part of the cycle where VCIs can meaningfully reduce drawdowns versus the underlying equity index. In this case, the S&P 500 Daily Risk Control 10% Index limited the loss to 2.3% compared to a decline of 12.5% for the S&P 500 in March.

Phase B – Rebound/"Whipsaw" Risk: After the shock, markets rebounded while realized volatility remained elevated. In this case, the S&P 500 Daily Risk Control 10% Index's equity weight remained below normal because the index was still incorporating high volatility observations in its lookback window. The result was a common *whipsaw* pattern: the VCI mitigated drawdowns but did not fully participate in the V-shaped market recovery. Overall, the index increased 9.50% from March's sell-off to the end of 2020, while the S&P 500 increased 27.1%.

Exhibit 6: S&P 500 Daily Risk Control 10% Index versus the S&P 500 (March 2020)

Average Daily Exposure to the S&P 500 (%)	S&P Daily Risk Control 10% Index ER (%)	S&P 500 PR (%):
20	-2.30	-12.50

Source: S&P Dow Jones Indices LLC. Data from Feb. 28, 2020, to March 31, 2020. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Exhibit 7: S&P 500 Daily Risk Control 10% Index versus the S&P 500 (March-December 2020)

Average Daily Exposure to the S&P 500 (%)	S&P Daily Risk Control 10% Index ER (%)	S&P 500 PR (%)
35	9.50	27.10

Source: S&P Dow Jones Indices LLC. Data from Feb. 28, 2020, to Dec. 31, 2020. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

It is worth noting that rebounding quickly while volatility remains elevated is not automatically desirable from a risk management perspective. In 2020, markets experienced multiple swings and repeated risk-off episodes. Increasing equity exposure too aggressively during the first rebound could have left the index vulnerable to subsequent drawdowns. The design intent of a VCI is to control risk by scaling exposure back only as volatility normalizes, even if that means giving up part of the initial recovery. A VCI is designed to reduce volatility and drawdown magnitude, not to time the bottom—lagging a quick rebound is not a failure of the index, it is a direct implication of volatility targeting.

April 2025 represents a more challenging example for VCIs and a special case rather than a typical high volatility outcome. Early 2025 was punctuated by tariff announcements, and the S&P 500 fell more than 13% from March 25 to April 8. This initial move was consistent with the protective behavior of VCIs—equity exposure would have been cut sharply in response to the volatility spike. However, on April 9, 2025, President Trump announced a 90-day tariff pause,

triggering a single-day S&P 500 gain of more than 9%—the third-largest single-day rally since the 1950s. The S&P 500 went on to post a total return of 16.4% for the full year of 2025, its third consecutive year of double-digit gains. While whipsaw activity continued beyond April—with further volatility episodes through the remainder of 2025—the data shows that the full-year performance drag was heavily concentrated in the April to October window. Approximately one-third of the S&P 500's 34.7% rebound between April 8 and Oct. 1 was reflected on April 9 alone, with the remainder of the gap reflecting the time that a daily rebalancing VCI requires to gradually re-leverage as volatility normalizes. By contrast, between October 2025 and February 2026—a period that also saw intermittent volatility—the VCI gained 0.9% versus the S&P 500's 2.5%, a modest gap consistent with normal VCI behavior. April therefore remains a special case, a sequence that drove the bulk of the full-year differential, rather than evidence of a persistent or systematic challenge throughout 2025.

Exhibit 8: S&P 500 Daily Risk Control 10% Index versus the S&P 500

Index	Performance (%)			
	Dec. 31, 2024, to April 8, 2025	April 8, 2025, to Oct. 1,2025	Oct.1, 2025, to Feb. 27, 2026	Feb. 27, 2026, to March 31, 2026
S&P 500 Daily Risk Control 10% Index	-9.9	12.4	0.8	-4.4%
S&P 500	-15.3	34.7	2.5	-5.1

Source: S&P Dow Jones Indices LLC. Data from Dec. 31, 2024, to March 31, 2026. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

This environment created a specific challenge for VCIs: large gains during short duration and high volatility periods are harder for VCIs to reflect, given the need to keep volatility on target. In practical terms, the VCI's lookback window still "saw" very high realized volatility on April 9, even as the market rallied, so equity exposure remained constrained precisely on the day of the rebound. The result is that VCIs missed a significant portion of that single-day rebound.

This may be one of the most difficult possible environments for any systematic rules-based strategy. This is not representative of how VCIs typically behave over full market cycles, nor does it diminish the strategy's primary purpose of risk management.

Key Takeaway: 2020 and 2025 together paint a relatively complete picture of VCI behavior in high volatility regimes.

- The year 2020 was a "textbook" case: the VCI delivered strong downside protection during a sustained crash, accepting a lag in the recovery in exchange for meaningful drawdown reduction.
- The year 2025 was the "stress test": the performance drag was concentrated in one extraordinary episode—April's extreme spike followed by an immediate historic rebound—and the S&P 500 Daily Risk Control 10% Index tracked closely in all other sub-periods.

Key Considerations for VCIs

VCI Economics

VCIs are often used in insurance solutions to seek more stable index behavior through time by targeting a defined level of volatility. Volatility targeting can positively influence option pricing inputs because index volatility is a key driver of option premiums. All else equal, lower expected volatility can translate into lower option cost. As a result, VCIs may allow insurers to structure crediting strategies that better fit within a given hedging budget. In addition, a smoother volatility profile may help reduce the likelihood of large swings in hedge costs and therefore support more stable index participation terms over time.

Another key driver of index option economics is the interest rate environment, because rates influence the forward level used in option pricing. Changes in rates can materially change the cost of providing the same option-based payoff, which is one reason caps/participation terms may vary over time, even when the underlying index methodology is unchanged. Separately, in addition to calculating excess returns, some indices also incorporate an explicit decrement, which could further reduce the index performance referenced by the option while subsequently lowering the option cost even more.

How Might Insurers Choose VCIs?

The future of VCIs is also rapidly evolving, shaped by advancements in technology and demand from insurance product providers for differentiating products. Conventional VCIs have proven their potential with a live track record of more than 15 years, especially covering periods when volatility was high and persistent. In the last five years, market shocks have increasingly occurred during the day, triggered by unexpected policy announcements, geopolitical events or liquidity flash crashes. Conventional VCIs, which only rebalance at market close on a two-to-three day lag, can be slow to adjust to changing markets, exposing a higher risk of volatility overshooting. Intraday VCIs aim to address this issue by leveraging intraday prices and rebalancing dynamically during the trading day. S&P DJI remains at the forefront of VCI innovation, offering both well-established VCIs and innovative intraday VCIs. For a more holistic comparison between the two approaches see Exhibit 9.

Exhibit 9: Daily Risk Control Indices versus Intraday Risk Control

Metric	Daily Risk Control	Intraday Risk Control
Trading Frequency	At close	Normally intraday and multiple times a day
Volatility Estimate	Realized volatility from daily price moves' exponential moving average, emphasizing recent days' moves	Ranges from simple (replicates daily approach using intraday data) to complex (recursive regression to estimate forward-looking volatility)
Index Leverage	Target volatility/realized volatility, subject to max leverage cap	Target volatility/realized volatility, often incorporates trend/option signal as acceleration factor; subject to cap and turnover limits
Additional Signal	Not applicable	Intraday trend/overnight reversion/option derived signal
Additional Risk Control	Not applicable	Secondary risk control layer to further smooth intraday risk profile
Return Type	Excess return	Excess return
Track Record	Since 2009	Since 2023

Source: S&P Dow Jones Indices LLC. Data as of March 31, 2026. Table is provided for illustrative purposes.

Selecting the right VCI as the underlying for an insurance product requires a holistic assessment that goes beyond index performance. It requires reviewing hedging efficiency, differentiation, simplicity of explanation, methodology transparency and finally performance—including whether the index has a live track record or is primarily back-tested. In addition, index selection should be assessed in tandem with product design and features, including crediting methodology, guarantee structure and distribution requirements, as these factors collectively determine whether a given index is suitable for the intended product.

By comparing indices across these dimensions, insurers can select the VCI best suited to their product strategy.

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