

Managed Variable Universal Life

Flexible risk management in life insurance

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Carriers issue indexed and variable universal life policies on both extremes of the investment risk spectrum, but significant opportunity lies in the balance.

We propose the concept of Managed Variable Universal Life (MVUL), a flexible bottom-up approach that gives life insurance companies the ability to target business objectives at the separate account level with highly customizable subaccount investments (structured funds) that can deliver precise payouts with the use of derivatives. We identify the value proposition of MVUL and explore the salient trade-offs between MVUL and indexed universal life (IUL) and variable universal life (VUL). In this paper we focus on the objective of enhanced cash value accumulation, but we note that management teams may have many different use cases for MVUL, such as utilizing embedded equity market hedges within the fund to potentially manage reserves and capital efficiently.

Executive Summary

Registered index-linked annuities (RILAs) revolutionized the annuity space and garnered substantial market share. Similarly, a next-generation universal life (UL) product, bridging the gap between IUL and VUL by offering enhanced cash value accumulation with a degree of principal protection, could bring significant benefits to policyholders and carriers alike.

MVUL gives insurers agency to engineer specific structured payoffs and risk management strategies directly within a fund, quickly and efficiently, on an existing variable chassis. MVUL can be differentiated from standard VUL by emphasizing structured fund investment options over the vanilla equity and fixed income funds available in VUL products today. Investment portfolios can be customized to meet the objectives of actuarial pricing teams, ensuring that a wide net of stakeholders are aligned throughout the entire product design and approval process.

In this paper, we introduce the concept of MVUL as a product, demonstrate its value using real-world stochastic return projections and a historical back-test, and interview life insurance

industry sales professionals to identify key improvements that could make MVUL the preferred industry solution for cash value accumulation.

We used real-world data to model hypothetical participation rates of MVUL strategies with buffers of 15%, 10%, and 0%, utilizing an asset portfolio consisting of U.S. Treasury instruments and corporate bonds. Under the median AAA scenario, we find that the projected policy year 30 account value (AV) of an illustrative policy taking the \$1.5 million death benefit option A is \$334,000 to \$683,000 higher with MVUL than traditional IUL. The strong crediting rates and AV growth potential of MVUL result in highly competitive illustrations, which may improve MVUL's marketability relative to other products.

A back-test of a hypothetical growth equity MVUL fund holding Nasdaq 100 call options backed by a BB asset portfolio exhibited strong return-to-risk characteristics, outperforming the S&P 500 Total Return Index by 1.54% annually with 10% less volatility. Because the fund purchases call options for its equity exposure, it has no downside equity risk, potentially resulting in limited reserve requirements relative to other existing VUL products.

Based on the interviews we conducted, we believe there is considerable market demand for an accumulation product, particularly with protection against adverse market events. While accumulation is a key objective for policyholders, negative investment performance can endanger the death benefit (DB) for heirs and erode anticipated retirement savings and income due to principal loss in the policyholder account value. Protection from market losses, especially early in the product life cycle, can help ensure that cash values grow large enough to sustain future volatility events without risking lapse.

No-lapse guarantees for a prespecified policy term were highlighted as an in-demand VUL product feature to help mitigate early account value depletion risk and allow cash value growth to become self-sustaining. Because MVUL is a unitized separate account product, it does not generate C1 asset-based charges.

While there are principle-based reserving (PBR) reserve requirements for MVUL with guaranteed benefits, hedges embedded within the subaccounts can help reduce them. With enhanced account value growth potential relative to similar IUL

and VUL products, carriers may be able to issue benefits such as no-lapse riders at discounted premiums or retain the excess premiums to improve profitability.

Sales professionals also emphasized the importance of being nimble and having the ability to provide exposure to popular indices or equity baskets. Because MVUL is highly customizable and payoffs can be structured on narrow indices or baskets of stocks, product teams can offer niche investment options—such as a subaccount linked to the “Magnificent Seven” stocks—to meet end-client demand.

Background

WHAT IS UNIVERSAL LIFE INSURANCE?

Universal life (UL) is a subset of permanent life insurance that usually features flexible premium payments and death benefits—increases in cash value due to investment gains may increase the death benefit (DB) or reduce cost of insurance (COI) payments. UL cash values accumulate on a tax-deferred basis and policies pay out a tax-free death benefit upon the death of the policyholder, or the death of the second policyholder in the case of a survivorship policy. UL is typically purchased for the death benefit, which can offset estate taxes and provide financial security to heirs. With higher funding levels, UL products can also be used as investment and cash accumulation vehicles. Because policyholders can borrow against their cash values without triggering tax implications and withdrawals are penalty-free after age 59½, some high-net-worth individuals (HNWIs) purchase UL to supplement traditional retirement vehicles such as 401(k)s and IRAs. For these types of policies, the industry has adopted the term “life insurance retirement plan” (LIRP). In some cases, HNWIs may fund their policies as single-premium using a bank loan and then use cash value increases to pay down the loan.

Although there are many UL products, such as fixed universal life, which credits interest based on a fixed rate, in this paper we explore IUL, VUL, and the nascent concept of registered indexed universal life (RIUL):¹

1. **Indexed universal life:** Interest is credited based on the performance of a reference index, such as the S&P 500. IULs have features designed to limit principal loss due to market volatility, featuring 0% floors and caps that limit upside interest crediting.

2. **Variable universal life:** Interest is credited based on the performance of subaccount investments, which may include equity and fixed income funds. Unlike IULs, VUL policyholders are fully exposed to negative subaccount investment performance, depending on their choice of funds, which could result in a lapse without an increase in premiums.
3. **Registered indexed universal life:** Interest is credited based on the performance of a reference index, such as the S&P 500. RIULs generally feature buffers that protect against the first specified percentage points of negative index returns and caps that limit upside interest crediting. RIULs expose policyholders to measured risk of principal loss in exchange for greater upside potential.

FIGURE 1: CREDITING PROFILE OF IUL WITH A 10% CAP

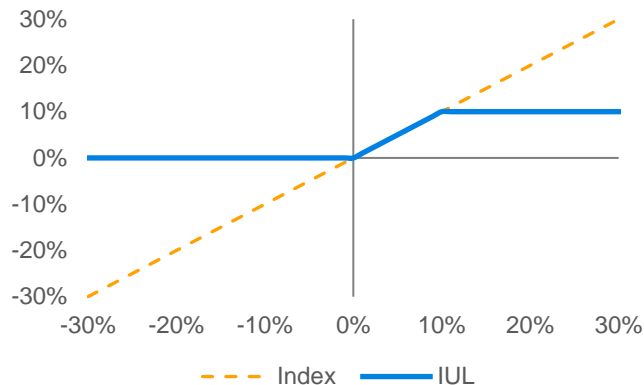
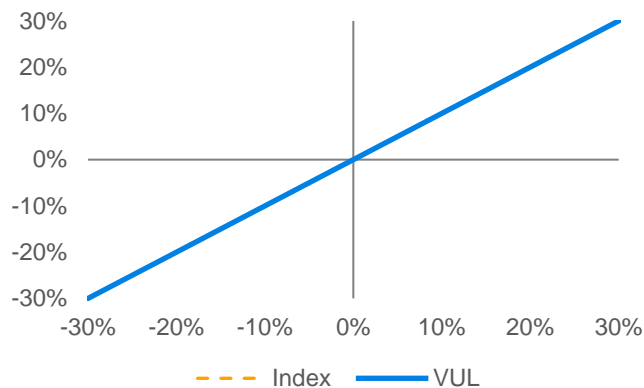
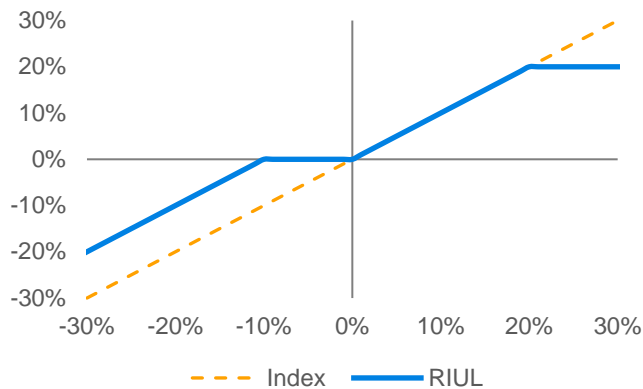


FIGURE 2: CREDITING PROFILE OF VUL



¹ Yadatore, K. & Camp, A. (November 2019). Registered Indexed Universal Life: Enrich Policyholder Value. Milliman Concept Paper. Retrieved March 18, 2024, from <https://www.milliman.com/-/media/milliman/pdfs/articles/registered-indexed-universal-life-concept-paper.ashx>.

FIGURE 3: CREDITING PROFILE OF RIUL WITH A 10% BUFFER AND 20% CAP

IUL has been dominant in the UL product space by sales, with a 57% market share according to a 2021 Milliman survey.² IUL writers have the ability to supplement the option budget with other charges deducted from the policyholder account value. However, the positive drift in equity markets has supported introducing risk-sharing to further bolster policyholder account value growth potential.

RIUL has been positioned both as a vehicle to improve cash value accumulation and as a solution to the low interest rate regime that has persisted since the global financial crisis of 2008, which has put downward pressure on fixed UL and IUL crediting rates. Volatile equity markets and rising interest rates since the Federal Reserve began raising the federal funds rate in 2022 may have discouraged carriers from launching RIUL products, but we expect additional entrants into the market when timing improves.

VUL sales trends have declined since the dot-com crash of 2001, as market losses drove substantial account value decreases, leading to poor client experience and in some cases early lapses. Some carriers addressed this by issuing universal life with secondary guarantees (ULSG), but these products have been less successful from a sales perspective than IUL in recent years.

WHAT IS MANAGED VARIABLE UNIVERSAL LIFE?

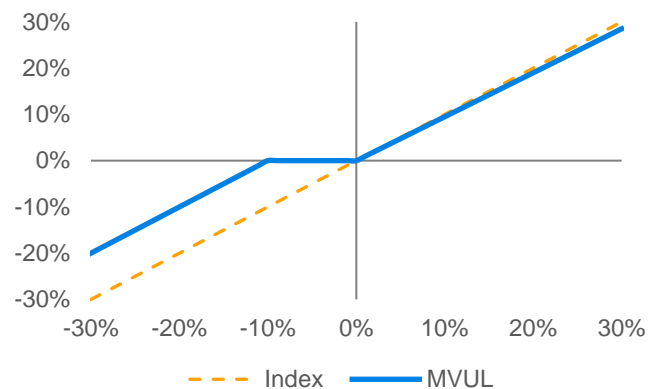
MVUL is a subset of VUL that uses structured funds to deliver policyholders enhanced cash value accumulation, degrees of principal protection, or both. Structured funds typically are Regulated Investment Companies (RICs) under the Investment Company Act of 1940, like any standard mutual fund offering in VUL subaccounts today. Structured funds can be quickly and

easily launched on existing platforms without additional U.S. Securities and Exchange Commission (SEC) product filings, aside from those required for the fund itself or securities licensing requirements for agents.

MVUL gives carriers the ability to exercise control over separate account assets by defining targeted subaccount investment policies and using financial derivatives such as options to transfer risk off the insurer's balance sheet to financial market participants such as trading firms and hedge funds.

MVUL's flexible approach to risk management enables life insurers to deliver a product anywhere on the spectrum of principal protection to principal appreciation. Embedded hedges weaker than the 0% floor of IUL but stronger than the full downside exposure of VUL balance cash value accumulation potential, with principal and death benefit preservation in a market downturn.

While MVUL can have any upside crediting mechanism found in life or annuity products, such as cap rates or trigger rates, we explore participation rates in this paper. The participation rate is a multiplier on reference index returns and can be greater or lower than 100%, depending on parameters such as option budget and crediting period. For example, if the reference index returns 20% and the participation rate is 90%, the policyholder would receive 18% interest credited.

FIGURE 4: CREDITING PROFILE OF MVUL WITH A 10% BUFFER AND 95% PARTICIPATION RATE

² Friedrich, C.A. & Krysiak, M. (July 5, 2022). Universal Life, Indexed Universal Life, and Variable Universal Life Issues: 2021/2022 Survey: Key Discoveries Summary. Milliman Research Report. Retrieved March 18, 2024, from <https://www.milliman.com/en/insight/universal-life-and-indexed-universal-life-issues-2022>.

Why MVUL?

Universal life has many advantages that make it desirable as a retirement product, especially for clients who have met 401(k) and IRA contribution limits. Despite the strong use cases for UL, the current product line up has limitations and VUL in particular has not kept pace with IUL as a retirement solution since the global financial crisis of 2008. While accumulation is a key objective for policyholders, the ability to meet expectations matters. If account values suffer early in the product life cycle before cash values are large enough to sustain market losses, then policyholders may have to top up premium to avoid policy lapse.

IUL offers policyholders certainty via stronger principal protection, but at the cost of accumulation potential. VUL meets the needs for accumulation, but has no downside risk mitigation, which has led to poor client experiences resulting from market losses in the recessions of 2001 and 2008. Can MVUL be positioned as the best of both worlds?

MVUL, with partial downside protection that can help insulate cash values from volatility events and with competitive crediting rates that can provide substantial retirement income, addresses the shortcomings of incumbent UL products and can be a solution for enhanced AV growth without excessive principal depletion risk, a critical requisite of LIRP. We explore several key benefits of MVUL below.

ENHANCED ACCOUNT VALUE GROWTH³

Accumulation is one of the most important aspects of VUL products, because excess account value gains can reduce cost of insurance charges, fund larger death benefits, and generate additional retirement income. MVUL, with superior equity participation rates relative to fixed UL and IUL products, exhibits enhanced accumulation historically via look-back and under stochastic return forecasting. With equity-like account value growth opportunities and embedded tail protection, MVUL is engineered for LIRP and can be a key component of the HNWI retirement tool kit.

ILLUSTRATION BENEFITS

MVUL, as a variable separate account product with potential account value loss, must be filed with state regulators and the SEC. For illustration purposes, variable products are exempt from the Life Insurance Illustrations Model Regulation (Regulation #582) of the National Association of Insurance Commissioners (NAIC) and from Actuarial Guideline XLIX (AG-49). Variable products are, however, subject to the NAIC's Variable Life Insurance Model Regulation (Regulation #270).

³ A more detailed exploration of AV growth is provided below in the Account Value Growth Projections section.

Aside from the regulatory relief and in line with expected account value performance, MVUL's competitive crediting rates may look better than other UL products.

FLEXIBLE PRODUCT DESIGN

Unlike IUL and RIUL which are constrained by the availability of liquid hedge assets, MVUL can provide structured payoffs on narrow indices with significant client demand such as the Magnificent Seven. Carriers may be unwilling or unable to absorb the basis risk between popular, in-demand indices such as the Magnificent Seven and the most correlated liquid hedge asset, likely Nasdaq 100 options in this case. MVUL solves this problem as basis risk is retained in the separate account and is assumed by policyholders, not the carrier. This can be a competitive advantage, as structured funds can be launched quickly and give product teams a high level of customization to meet esoteric client demand that cannot be matched in non-unitized products.

VUL products generally feature multiple investment options across the risk spectrum to address client needs at different stages of the product life cycle or at different ages. MVUL builds on these concepts to provide a more dialed-in and precise investment return profile. For carriers primarily focused on accumulation products (AccumUL), MVUL can be structured to target additional upside via participation rates greater than 100% by reducing downside buffer protection.

OPERATIONAL BENEFITS

Unlike RIUL which would require a new product filing, MVUL can be quick-to-market and easily launched on a preexisting variable chassis. The MVUL structured fund does not require the carrier to conduct any additional asset liability management (ALM) or hedging, which makes MVUL a good alternative to RIUL for carriers that lack investment and hedging expertise or are unwilling to bear the related expenses.

Although UL is out of the scope of Actuarial Guideline LIV (AG-54), which governs nonforfeiture requirements for index-linked variable annuities, the NAIC may institute a similar regulation for life insurance products and require insurers to disseminate market-based daily interim values for the options backing IUL and RIUL policies.

This would require insurance companies to develop valuation policies and the operational capabilities to communicate those valuations to policyholders, which may require significant capital investment and resource allocation. Because the options within MVUL are the assets of a fund publishing daily net asset values (NAVs), MVUL is likely to be compliant with any future regulation the NAIC may require.

CAPITAL CONSIDERATIONS

As a life insurance product, UL is subject to the NAIC’s principle-based reserving (PBR) and risk-based capital (RBC) requirements. Because strong credit ratings are fundamental to managing borrowing costs and winning investor confidence, many companies tend to hold in excess of 300% of the company action level (CAL) to maintain competitive credit ratings from ratings agencies.

For IUL and RIUL, carriers typically invest policyholder premiums in fixed income assets to generate spread income, producing C1 asset-based charges. Because MVUL subaccounts are self-contained unitized separate account assets and not an insurer’s invested assets, MVUL does not generate asset-based capital requirements.

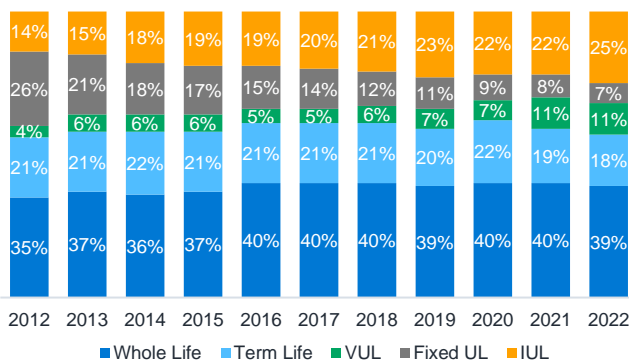
MVUL, by embedding downside protection within the separate account, may dampen the impact of equity shock scenarios, leading to implications for PBR reserves under VM-20 and economic capital regimes. These scenarios may be used to subsidize premium discounts or increase profit margins.

Sales trends

In Figure 5, we show the distribution of life product market share from 2012 through 2022 by annualized premiums. As fixed UL products lost traction due to lower new money crediting rates, IUL took significant market share. In 2021 and 2022, there was a resurgence in VUL sales, likely due to strong equity market performance. In Figures 6 to 8, we show sales trends in IUL, RILA, and a subset of structured funds known as “defined outcome” exchange-traded funds (ETFs). Due to their similar characteristics, we view RILA as an analogue to RIUL and defined outcome ETFs as an analogue to MVUL, although we note that “defined outcome” is a narrow universe of investable structured funds. The market opportunity may be significantly larger.

LIFE PRODUCT MARKET SHARE

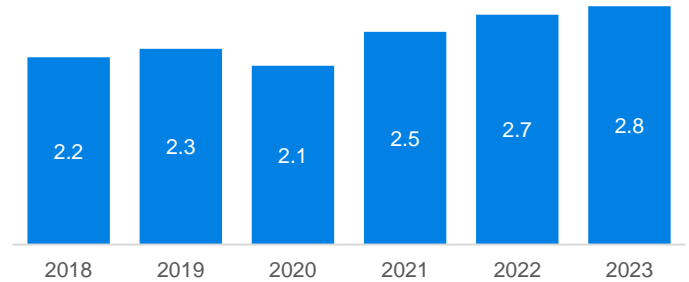
FIGURE 5: LIFE PRODUCT PREMIUM DISTRIBUTION



Source: LIMRA.

INDEXED UNIVERSAL LIFE

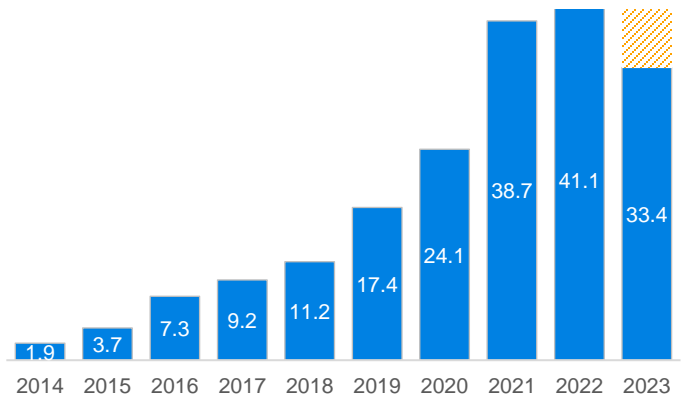
FIGURE 6: INDEXED UNIVERSAL LIFE SALES IN USD BILLIONS



Source: Wink’s Sales & Market Report.

REGISTERED INDEX-LINKED ANNUITIES

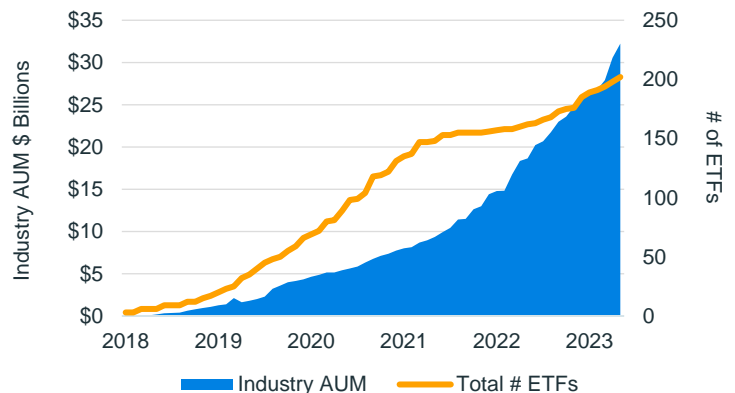
FIGURE 7: STRUCTURED ANNUITY SALES IN USD BILLIONS



Source: LIMRA (2023 data through 3Q, annualized).

STRUCTURED FUNDS

FIGURE 8: DEFINED OUTCOME ETF INDUSTRY GROWTH



Source: ETF.com.

Product mechanics

INDEXED UNIVERSAL LIFE

With spread products, such as IUL and RIUL, policyholder premiums are commingled with general account assets and the insurance company earns the spread between the performance of the general account asset portfolio (net of defaults, impairments, expenses, etc.) and the interest credited to policyholders. For an IUL contract, the basic hedge asset is a call spread with the long call option struck at-the-money (ATM) and the short call option struck out-of-the-money (OTM) at the cap level. For an RIUL contract, the policyholder is short a put option, which supplements the net investment earned rate (NIER) and allows for a higher cap rate.

INDEXED UNIVERSAL LIFE HEDGE ASSETS

1. **IUL Cap/Floor** = ATM Call - OTM Call
2. **RIUL Cap/Buffer** = ATM Call - OTM Call - *OTM Put*

Carriers deduct the target spread from the asset earned rate to determine the option budget (i.e., the hedge budget) and set the cap rate based on the width of the call spread equal in price to the option budget.

STRUCTURED FUNDS

Unlike other iterations of UL in which policyholders purchase guarantees from the insurance company and are credited interest based on returns in the company's general account asset portfolio, in VUL and MVUL premiums are segregated in the separate account and policyholders directly own the assets backing their policies. While equity, fixed income, and asset allocation funds are common investment offerings within VUL, MVUL features a special type of fund known as a "structured fund."

Structured funds combine elements of equity and fixed income, often using derivatives such as options, to provide highly customized payoff profiles. In the context of MVUL, structured funds are anticipated to hold equity options portfolios collateralized by fixed income assets such as U.S. Treasury securities, corporate credit, fixed income exchange-traded funds (ETFs), and money market instruments.

In this paper, we explore hypothetical structured funds deriving option budget from non-risk-free asset portfolios. The portfolio aggregate yield-to-worst (YTW), the best estimate of the expected investment income from the fixed income instruments within the fund, is monetized along with the premium generated from put option sales to provide upside equity exposure. Because the fund absorbs credit and duration risk, upside participation rates or cap rates are higher than would be expected with a risk-free construction. Portfolio riskiness can be dialed up or scaled back by reconfiguring the fund's fixed income asset mix and options holdings. Credit quality, duration, downside protection parameters, and upside crediting mechanisms can all be fine-tuned to meet an insurer's business objectives.

FIGURE 9: COMPARISON BETWEEN IUL, RIUL, TRADITIONAL VUL, AND MVUL

	IUL	RIUL	VUL	MVUL
Supplemental ALM / Hedging Program Not Required?			✓	✓
Insulated from Issuer Credit Risk?			✓	✓
Accumulation Potential?	Lowest	Medium	Highest	Variable*
Transparent Daily Market Value?			✓	✓
Daily Liquidity?			✓	✓
Exempt from Model Illustration Regulation and AG-49?		✓	✓	✓
Exposure to Negative Investment Performance?	None	Limited	Full	Limited
Subject to C1 Risk-Based Capital Charges?	✓	✓		

* MVUL accumulation potential is dependent on its strategy parameters and can be higher or lower than traditional VUL.

Account value growth projections

To illustrate the impact of this concept in account value accumulation, we prepared four index strategies for the comparison, which are:

1. **Traditional IUL:** 0% floor, 9.27%⁴ cap rate.
2. **Managed VUL #1:** 15% buffer, 83.3% participation rate.
3. **Managed VUL #2:** 10% buffer, 96.3% participation rate.
4. **Managed VUL #3:** No downside protection, 132.7% participation rate.

We derived historical option budgets for the hypothetical MVUL strategies by setting the portfolio earned rate to an equal-weight blend of the 12-month U.S. Treasury bill yield-to-maturity (YTM) and the ICE BofA BB U.S. High Yield Index aggregate YTW and using a target spread of 0%, because structured funds pass on the full asset portfolio yield. In reality, the MVUL strategies would need to replicate the ICE BofA BB U.S. High Yield Index either directly or by utilizing index-tracking ETFs, thus realizing some amount of tracking error and asset management expenses. We selected BB-rated debt due to its unique position on the credit spectrum, which contributes to very strong reward-to-risk characteristics. Although only one notch below investment grade (IG), IG-only bond managers are precluded from holding BB credits, which systematically creates excess supply when formerly IG bonds are downgraded (e.g., fallen angels). This causes a jump in yields for BB bonds relative to BBB bonds, rewarding BB holders with more yield for only a marginal increase in risk.

To calculate the model participation rates, we used historical S&P 500 volatility surfaces from the Chicago Board Options Exchange (Cboe) and an option pricing model to compute out-of-the-money (OTM) put and at-the-money (ATM) call prices and solved for the maximum ATM call quantity such that:

$$\text{ATM Call Units} = (\text{Asset Yield} + \text{Put Price}) / \text{Call Price}$$

We used real-world option market bid/ask spread assumptions and a combined 1.25% fund management, product, and mortality and expense (M&E) fee estimate for the hypothetical MVUL policies. We did not use any AV-based charges for the illustrative IUL policy, which was modeled using actual historical IUL new money cap rates from December 2018 through September 2023.

⁴ The 5-year average of up to 75 products in Wink's LifeSpecs analysis tool.

⁵ - We modeled an illustrative policy with the following specifications, where the only non-guaranteed element was the cost of insurance rates:

- Male standard nonsmoker, issue age 35, \$1.5 million of face amount at issue, matures at age 120, death benefit option A.

Although the MVUL strategies hold a substantial fixed income allocation, in these scenarios we assumed zero credit losses and no tailwinds from the downward trend in interest rates over time to isolate the equity impact and contextualize returns against IUL in which policyholders are not directly exposed to interest rate and credit risk.

To compare performance, we use an illustrative policy, which is a male, issue age 35, standard nonsmoker with a face amount of \$1.5 million death benefit option A at issue.⁵ We modeled this illustrative policy using the 1,000 American Academy of Actuaries (AAA) real-world economic scenarios as of September 30, 2023. We chose the scenarios generated for the U.S. Diversified Equity, which is commonly used as a proxy for the S&P 500 Total Return Index. We converted the total returns from the AAA scenarios to index price returns by subtracting a 2% dividend yield. As this is an illustration of the concepts, we did not model any mortality, lapses, or other policyholder behavior.

ACCOUNT VALUE ACCUMULATION

In the long term, the account value of the policyholder can be significantly greater with MVUL compared to a traditional IUL. By staying invested in the contract over long-term investment horizons, the policyholder benefits from the positive drift in equity markets and realizes the equity risk premium. Figure 10 shows the policy year 30 AV growth projections for IUL and the three sample MVUL strategies at different percentiles under 1,000 AAA scenarios.

FIGURE 10: HYPOTHETICAL ACCOUNT VALUE GROWTH PROJECTIONS

AV PROJECTION ('000)	STANDARD IUL	MANAGED VUL #1	MANAGED VUL #2	MANAGED VUL #3
5 th Percentile	831	664	549	383
50 th Percentile	1,200	1,534	1,559	1,883
95 th Percentile	1,466	4,015	4,450	9,555

By design, MVUL #1 offers the most downside protection while MVUL #3 has the least. This translates into substantial performance differentials under different equity scenarios. All MVULs illustrate better performance than a traditional IUL at the 50th percentile with far superior performance at higher percentiles.

- Five annual premium payments of \$68,000, which approximates to one-fifth of guideline single premium, and also meets 7702(A) requirements.

- Current COI rates are 100% of the VBT 2015 Select & Ultimate male nonsmoker.

- Premium load of 6%, annual per policy charge of \$60, annual load of \$2.40 per 1,000 of face amount for 10 years.

We illustrate the 5th percentile, 50th percentile, and 95th percentile AV growth projections below in Figures 11 to 13.

FIGURE 11: AV GROWTH FOR 5TH PERCENTILE SCENARIO (\$ '000)

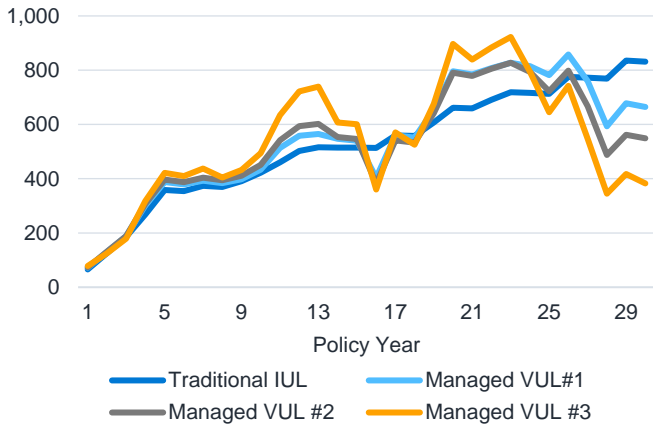


FIGURE 12: AV GROWTH FOR MEDIAN SCENARIO (\$ '000)

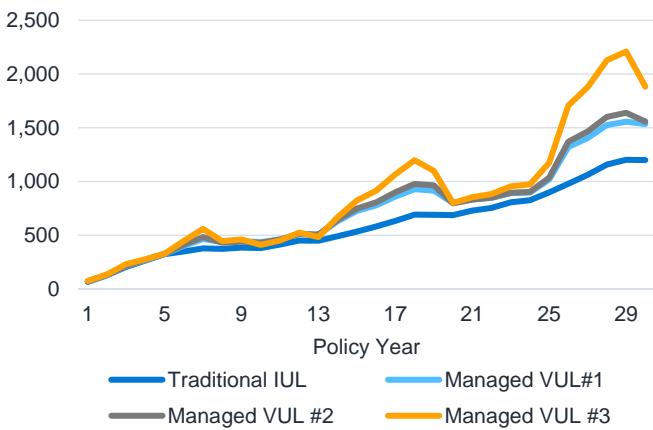
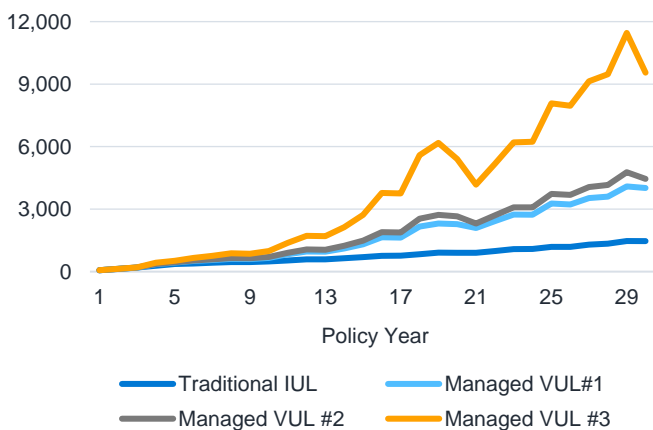


FIGURE 13: AV GROWTH FOR 95TH PERCENTILE SCENARIO (\$ '000)



In Figures 14 to 17, we display AV growth projections using the 5th percentile, 50th percentile, and 95th percentile equity scenarios grouped by policy type.

FIGURE 14: AV GROWTH FOR HYPOTHETICAL IUL (\$ '000)

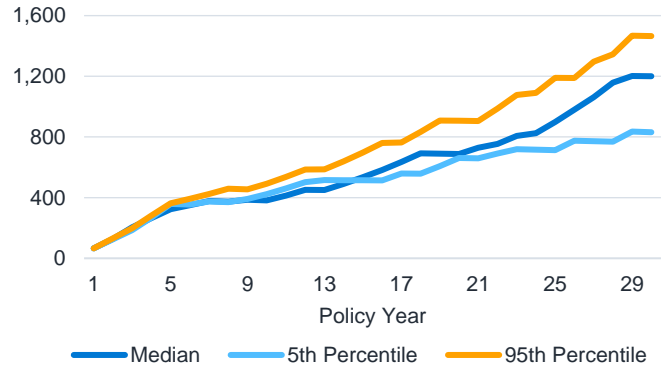


FIGURE 15: AV GROWTH FOR HYPOTHETICAL MVUL #1 (\$ '000)

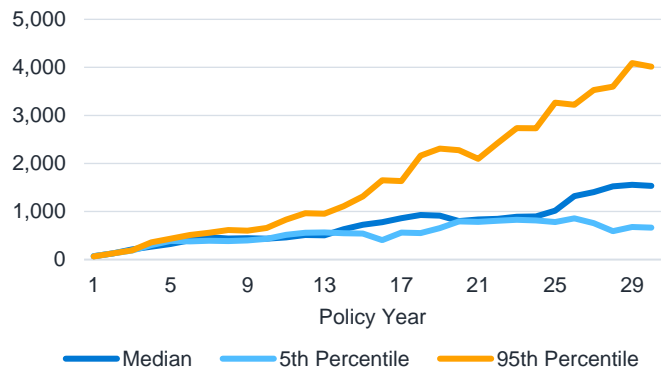


FIGURE 16: AV GROWTH FOR HYPOTHETICAL MVUL #2 (\$ '000)

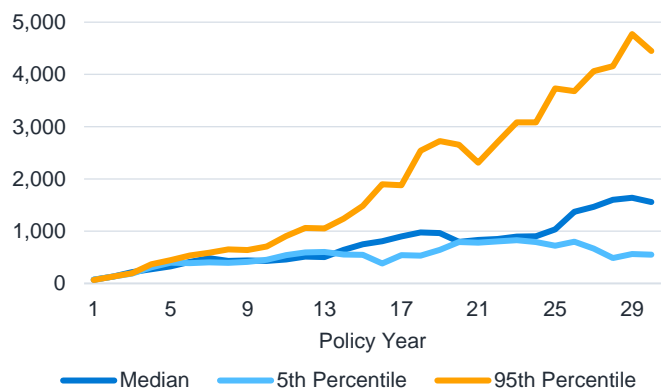
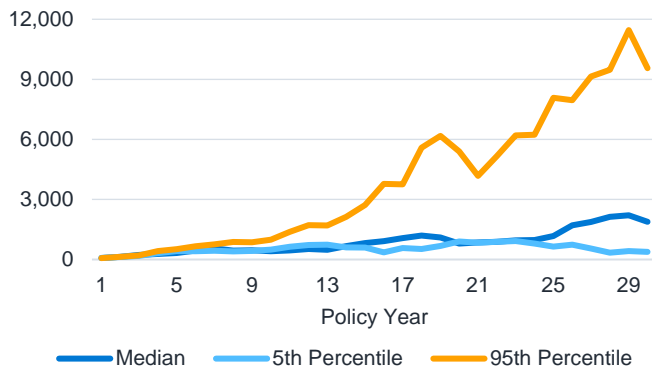


FIGURE 17: AV GROWTH FOR HYPOTHETICAL MVUL #3 (\$ '000)

Structured fund innovation

As mentioned, structured funds are highly customizable and can be designed for specific business purposes. Actionable strategies can be engineered to dial risk up or down relative to existing investment options by reconfiguring downside risk parameters, increasing or decreasing credit quality and duration, and changing underlying equity exposures.

Interesting opportunities may exist for target date glide path strategies in MVUL, where funds employ conservative hedging strategies to help protect cash values during the early years of a policy and again at retirement age but reduce the potency of hedges during the middle of the policy life to increase accumulation potential. Because MVUL is tax-deferred, similar dynamics can be achieved by offering conservative, moderate, and aggressive subaccount investment options. Although the iterations of MVUL are limitless, in the remainder of this section we focus on a hypothetical growth equity MVUL fund backed by a BB asset portfolio.

HYPOTHETICAL GROWTH EQUITY FUND CONSTRUCTION

While carriers cannot hold BB bonds in the general account without incurring punitive C1 charges, siloing the bonds within the separate account via a structured fund allows policyholders to access this desirable tranche of credit.

We consider a hypothetical MVUL construction that monetizes the expected investment income from a BB fixed income asset portfolio to purchase a Nasdaq 100 call option overlay while dedicating a fixed annual premium spend to a long-dated S&P 500 put option overlay. The option overlays are staggered across multiple maturities and investment horizons to introduce time diversification. The Nasdaq 100 call options are purchased to maximize accumulation potential, given the strong historical growth profile of the index, whereas the long-dated S&P 500 put options are purchased as liquid tail hedges to insulate the fund against negative shocks to the BB asset portfolio. Given the positive correlation between equity risk and credit risk, the S&P 500 put option overlay may help neutralize the elevated risk of default of the BB portfolio relative to an IG portfolio. Additionally, due to the S&P 500 put option overlay embedded within the fund, equity shock scenarios may show increasing AV in severe negative market downturns, offsetting the increasing value of guaranteed benefits.

HYPOTHETICAL GROWTH EQUITY FUND PERFORMANCE

We back-tested the hypothetical MVUL growth equity strategy using historical market data such as volatility surfaces, forward curves, bond returns, and equity returns. We included real-world option bid/ask spread assumptions and calculated performance gross of fund management fees and product fees. In Figure 18 we show the growth equity MVUL summary statistics relative to the S&P 500 and Nasdaq 100 total return indices as well as a benchmark 60/40 blended portfolio consisting of 60% exposure to the S&P 500 Total Return Index and 40% exposure to the Bloomberg U.S. Aggregate Total Return Index. In Figure 19 and Figure 20, we show the hypothetical growth of a \$100 investment from 1Q 2007 through 4Q 2023 and calendar-year returns, respectively.

FIGURE 18: INVESTMENT SUMMARY STATISTICS

SUMMARY STATISTICS	S&P 500	NASDAQ-100	60/40 BLENDED PORTFOLIO	MVUL FUND
Cumulative Return	322.97%	885.12%	247.72%	428.07%
Annualized Return	8.99%	14.63%	7.72%	10.44%
Annualized Volatility	20.36%	22.99%	14.35%	10.34%
2008-2009 Drawdown	-55.25%	-53.42%	-38.55%	-32.66%
2022-2023 Drawdown	-24.49%	-35.04%	-23.14%	-20.00%

FIGURE 19: NET ASSET VALUE FROM 2006 THROUGH 3Q 2023

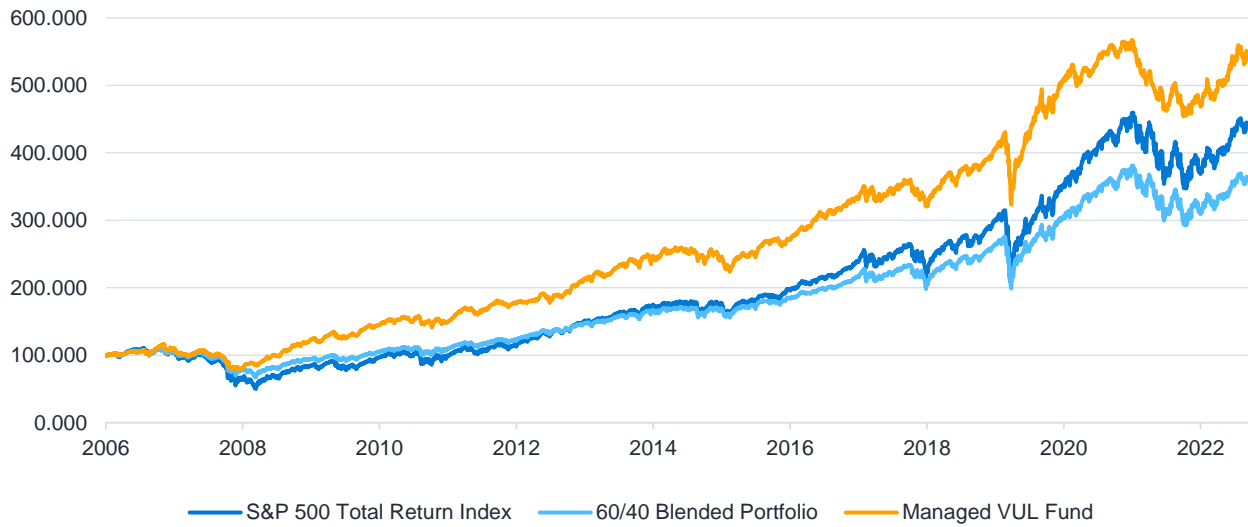


FIGURE 20: TOTAL RETURNS BY YEAR

YEAR	S&P 500	NASDAQ-100	60/40 BLENDED PORTFOLIO	MANAGED VUL FUND
2007	5.49%	19.24%	5.91%	9.93%
2008	-37.00%	-41.57%	-24.94%	-25.56%
2009	26.46%	54.61%	18.25%	50.26%
2010	15.06%	20.14%	12.01%	17.79%
2011	2.11%	3.66%	4.07%	3.23%
2012	16.00%	18.35%	11.84%	18.60%
2013	32.39%	36.92%	21.06%	20.76%
2014	13.69%	19.40%	11.63%	14.40%
2015	1.38%	9.75%	1.17%	-0.49%
2016	11.96%	7.27%	9.62%	11.11%
2017	21.83%	32.99%	17.53%	22.40%
2018	-4.38%	0.04%	-3.47%	-2.71%
2019	31.49%	39.46%	26.59%	25.59%
2020	18.40%	48.88%	16.39%	26.19%
2021	28.71%	27.51%	23.55%	10.41%
2022	-18.11%	-32.38%	-17.42%	-16.90%
2023	13.07%	35.37%	11.03%	12.59%

Industry professional interviews

During interviews with industry professionals with backgrounds in insurance sales and product strategy, several common themes emerged regarding the concept of MVUL and how best to position and sell the product.

MARKET DEMAND

There is considerable market demand for accumulation products, particularly ones that offer protection against adverse market events. MVUL could get traction if the products offered new fund options and not just the typical indices that dominate the set of IUL strategies or fund types that are common in VUL lineups. For example, a fund with the Magnificent Seven stocks or similar bespoke fund packages offered in the MVUL design could make it quite unique and appealing. There could be demand from carriers, agents, and clients who have portfolios of funds in mind that would make good candidates to offer protection from market exposure while still providing attractive returns.

As other companies have started to experiment with variable-indexed universal life hybrids, the market reception has been positive, and MVUL would further expand the suite of offerings.

The market is going to be interested in what distributors have success talking about with their clients. MVUL could provide a more understandable story than some other contemporary products, simplifying sales.

ACCUMULATION POTENTIAL

According to industry sales professionals, accumulation of account value is the metric that matters the most when comparing UL, IUL, or VUL offerings. MVUL offers downside protection while also having significant upside potential with customizable investment options. This could translate into performance differentials under different equity scenarios or allow clients to target areas of the market where they are seeking exposure or believe in growth potential.

One of the challenges of VUL is that, if account values decline shortly after the policy is sold, then the entire financial plan that the policy supports may falter. If MVUL can help stabilize account value growth, financial plans will perform better over a long investment horizon. Advisors selling MVUL could look to differentiate it from other VUL and IUL products through both short-term and long-term growth targets.

MVUL, given its strong accumulation potential, may fit sales scenarios that highlight the investment aspects of VUL for policyholders seeking bespoke financial planning. Additionally, the company-owned life insurance (COLI) market could have a need for MVUL because of its stable, structured, and customizable characteristics.

PRODUCT POSITIONING

MVUL is highly customizable and payoffs can be structured on narrow indices or baskets of stocks. Product teams can offer niche investment options to meet end-client demand.

Financial planning professionals agreed that MVUL can be easily explained and sold as a variant of IUL, thereby tapping into the substantial IUL market space. However, given that the product can only be sold by registered agents, the prospective policyholders are expected to be sophisticated and would gravitate toward sophisticated products such as a VUL.

The financial professionals also agreed that MVUL is best positioned as a cash accumulation product that will serve as a substantial financial investment vehicle besides providing life insurance protection.

The sales case could come down to what the product illustrations show and how well the distribution attracts clients who are seeking investment options with protection. Product positioning toward the target markets where MVUL would have most appeal is a key to success, as indicated by sales professionals. That might be high-net-worth individuals, affluent business owners, or COLI.

REGULATORY COMPLIANCE

As discussed above, MVUL is a registered product that needs to be filed as a separate account product with the state regulator and can only be distributed by SEC-licensed financial advisors. MVUL can be quick to market and readily launched on a preexisting variable chassis.

The downside protection of MVUL could offer some improvement in reserve liabilities associated with any death benefit guarantees in equity shock scenarios compared to existing VUL products. This could translate to improvements in affordability or performance.

SALES TRENDS

VUL sales over the past two decades have been lower than IUL sales due to a myriad of reasons. VUL sales tend to track with the stock market and haven't recovered despite the relatively strong market over the last decade. While this leaves significant room for growth in the VUL space, it highlights the challenge ahead for MVUL.

Policy illustration and marketing considerations

Policy illustrations play an important role in the sale of UL insurance policies and are one of the key marketing tools utilized by most sales agents. They offer prospective policyholders a visual representation of how their policies may perform over time.

Different UL products, e.g., VUL, group universal life (GUL), IUL, etc., have varying complex product features and guarantees. They must be considered and illustrations should clearly reflect these differences. Insurance companies must balance compliance with current and emerging regulations with exploring innovative illustration practices in an ever-evolving and competitive environment.

There are several key components of policy illustrations. The NAIC requires life insurance products to clearly specify guaranteed elements such as death benefit guarantees, maximum charges, and minimum interest rates; non-guaranteed elements such as account value growth rates, charges, and fees; assumptions and methodologies used to generate the illustrations; and other various policyholder disclosures and documentation requirements that are aimed toward promoting consistency, clarity, and transparency for the policyholder.

From a regulatory perspective, UL products are generally required, with few exceptions, to comply with Life Insurance Illustrations Model Regulation #582 (Regulation #582). IUL products are additionally required to comply with Actuarial Guideline 49B as of the writing of this paper. VUL and VUL chassis products, such as MVUL, are not required to comply with Regulation #582 and AG-49B but are required to comply with various SEC requirements and the Variable Life Insurance Model Regulation (Regulation #270).

ILLUSTRATED GROWTH RATES

As stated previously in this report, accumulation of account value is an important metric when comparing UL, IUL, or VUL offerings. Insurers typically project the account value based on certain assumptions regarding the account value growth rates, providing policyholder illustrations accordingly.

In the case of IUL offerings, there have been significant changes over the years to level the playing field and ensure that account value growth rates are justifiable and illustrated consistently with actual and anticipated experience. Under AG-49 and its subsequent revisions, insurers are now required to limit the effect of bonuses and multipliers, and also treat volatility-controlled indices (VCIs) uniformly. This results in maximum allowable illustrated growth rates for IUL to be generally capped at benchmarked indices. MVUL products are not currently subject to AG-49 and can potentially illustrate higher growth rates. It also allows for insurers to illustrate a wide range of investment options and provides flexibility in integrating with a company's current VUL offerings. For MVUL products, we recommend that insurers should consider the guiding principles of AG-49B and Regulation #582 when illustrating account value growth rates to ensure policyholders are not misled by overly optimistic illustrations.

MARKETING CONSIDERATIONS

Although MVUL products allow for higher and more realistic growth rates, the illustrations must follow SEC standards, and proper fund disclosures and prospectuses must be provided. Insurers will also need to educate sales forces about the benefits and features embedded within the MVUL chassis in order to promote clarity and transparency for the policyholder.

Insurers must also navigate state-specific regulations governing policy illustrations and the impact of these regulations on the marketing of this product. To promote confidence in the policyholder regarding the underlying returns of the product, insurers might consider raising awareness of the regulatory protections in place to safeguard policyholders from misleading illustrations.

Conclusion

Managed Variable Universal Life (MVUL) is a flexible and customizable product that can offer enhanced cash value accumulation and death benefit protection for life insurance policyholders. MVUL allows insurers to design structured payoffs and risk management strategies within a separate account fund, using financial derivatives such as options to transfer risk from the insurer to derivatives market participants, stabilizing capital and reserves.

MVUL can be positioned as a hybrid between indexed universal life (IUL) and variable universal life (VUL), offering higher upside potential than IUL and partial downside protection compared to VUL. MVUL also provides tangible benefits to insurance companies as the structured fund construct does not require additional hedging or asset liability management and it may reduce reserve and capital requirements.

MVUL is well suited to meet market demand for accumulation products with protection features, presenting use cases for high-net-worth individuals using life insurance as a retirement vehicle and for COLI, as noted by the life insurance industry professionals we interviewed.

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