THREE HORIZONS CAPITAL · RESEARCH

Where the Ladder Sits.

Autocallable ETFs put structured income in a daily-liquid, transparent wrapper, and that part works. We ran today's ladders through three past sell-offs and built four hypothetical notes to see which design choices hold up when markets fall.

1 in 3

Tranches in a worst-of fund's live ladder that would have failed the coupon test in the 2022 decline, against 1 in 12 for a freshly struck ladder

53% and 83%

Share of tranches failing the coupon test in the global financial crisis: a single-index fund and a worst-of fund

60-70%

Today's typical coupon barrier, a 30-40 point cushion against sell-offs that have reached about −57%

THE FINDING IN ONE LINE

For anyone designing or buying autocallable income: the headline barrier tells you part of the risk; how deep it sits against real drawdowns, and where the live ladder stands when a shock arrives, tell you the rest.

Three Horizons Capital, Portfolio Construction. Rolling 12-month coupon-barrier test on two live funds' ladders held 16 Oct 2026; four hand-built hypothetical notes on public index levels. Research, not investment advice.

01 The wrapper solved liquidity and transparency; the notes inside carry the stress

An autocallable ETF holds a ladder of synthetic autocallable notes, usually through swaps with a bank, inside an exchange-traded fund. It aims to pay a high monthly income linked to equity indices, without the single-note illiquidity, opacity and credit concentration of a bank-issued structured note.

The category is young and growing. The first fund of its kind launched in June 2025, and issuers now run families of related funds across different reference indices, barrier depths and coupon designs.

The wrapper delivers what it promises: daily liquidity and daily holdings. The question for a product team or a buyer is a different one. Are the notes inside built to keep paying through a real sell-off?

02 Every fund we reviewed is built from the same four levers, set once at issuance

LEVER	WHAT IT DOES	TYPICAL SETTING TODAY
Reference	The index the note tracks: one index, or the worst of two or three	One large-cap US index, or the worst of the S&P 500, Nasdaq-100 and Russell 2000
Autocall barrier	At or above it on an observation date, the note is called and principal returned	100% of strike, checked quarterly
Coupon and maturity barrier	Above it, the coupon is paid; below it, the coupon is skipped, and below it at maturity, principal falls with the index	60% (single-index) to 65-70% (worst-of), a 30-40 point cushion, checked monthly
Ladder	Many tranches struck on staggered dates, each re-struck when called or matured	52 live tranches (single-index) and 24 (worst-of), 16 Oct 2026

Tenors run two to five years, and the autocall shortens them in calm or rising markets. In both funds we reviewed, a missed coupon is lost for good. The same issuer's newer growth fund, launched in April 2026, stores a missed coupon and pays it later, a sign of where the category is heading.

Current practice, then, is a fixed barrier set once at issuance and laddered across dates, while every tranche references the same few large-cap US indices.

03 Run through past sell-offs, today's ladders would have missed coupons in most crisis-vintage tranches

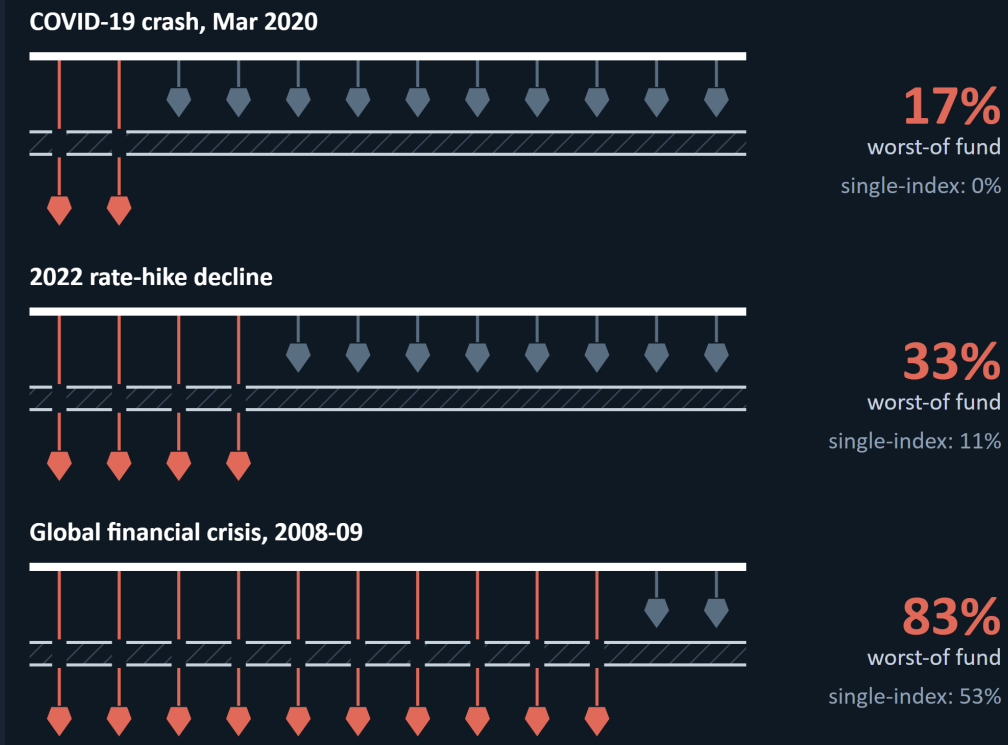
We applied a rolling 12-month coupon-barrier test to the tranches each fund held on 16 October 2026, across three historical episodes. It measures how today's design would have behaved, not what either fund returned.

- **Global financial crisis:** 53% of the single-index fund's tranches (357 of 676) and 83% of the worst-of fund's (80 of 96) would have failed the coupon test.
- **COVID-19 crash:** all 676 single-index tranches passed; 17% of the worst-of fund's (16 of 96) failed.
- **2022 decline:** 11% (72 of 676) against 33% (32 of 96).

The gap is consistent with the worst-of design: a basket marked on its weakest index gives three chances to breach instead of one. The two funds also differ in barrier depth and reference index, so the worst-of feature is one explanation among several.

Run through three past sell-offs, up to 10 in 12 of today's worst-of coupon tests broke the barrier

Worst-of fund's ladder as held on 16 Oct 2026, in twelfths of its coupon tests; the single-index fund's share beside each



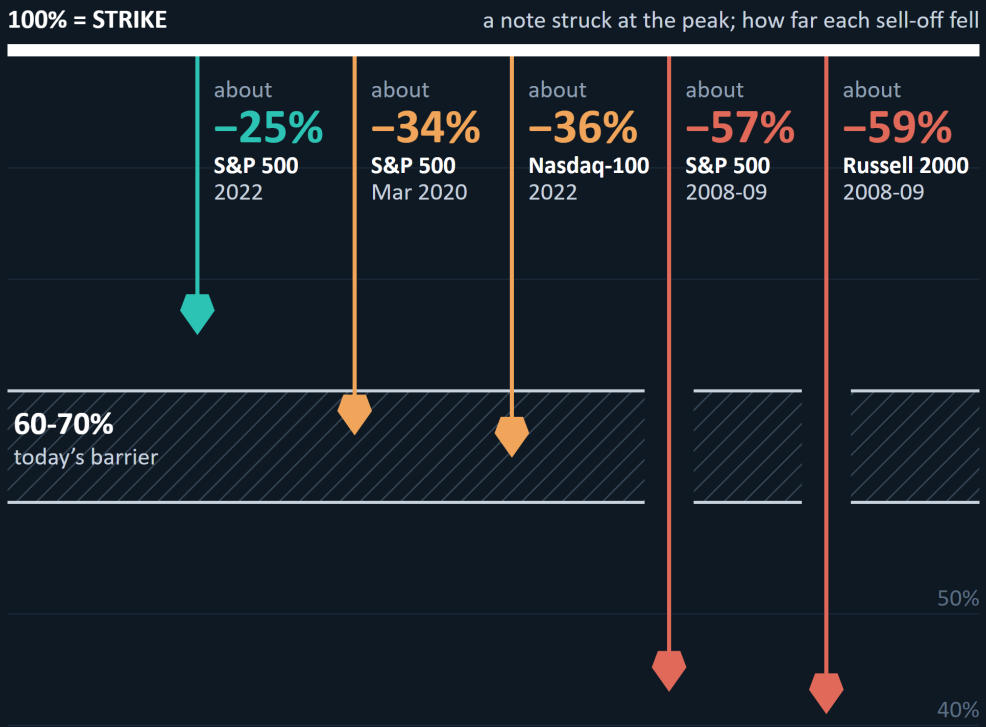
Worst-of fund: each line one twelfth of coupon tests; red lines broke the barrier.

Source: Three Horizons Capital analysis; public fund documents and index data. A stress test of today's design, not fund returns.

Barrier depth is the other part of the picture. A 60-70% barrier assumes the reference will not fall more than 30-40% from its strike. Since 1985 the S&P 500 has had five drawdowns of 20% or more, including about −57% in the global financial crisis and about −34% in the COVID-19 crash; the Nasdaq-100 fell about −36% in 2022, and the Russell 2000 about −59% in the crisis. For a note struck near a peak, the two crisis-scale falls went deeper than the cushion.

A 30 to 40 point cushion; the two financial-crisis falls went deeper

Approximate peak-to-trough falls on public index levels, for a note struck at the peak



Source: public index levels. Since 1985 the S&P 500 has had five drawdowns of 20% or more.

04 Where the ladder stands when a shock arrives matters as much as its terms

Strikes roll on a calendar. So a ladder's exposure to the next downturn depends on where its live tranches happen to sit against their own barriers when it starts.

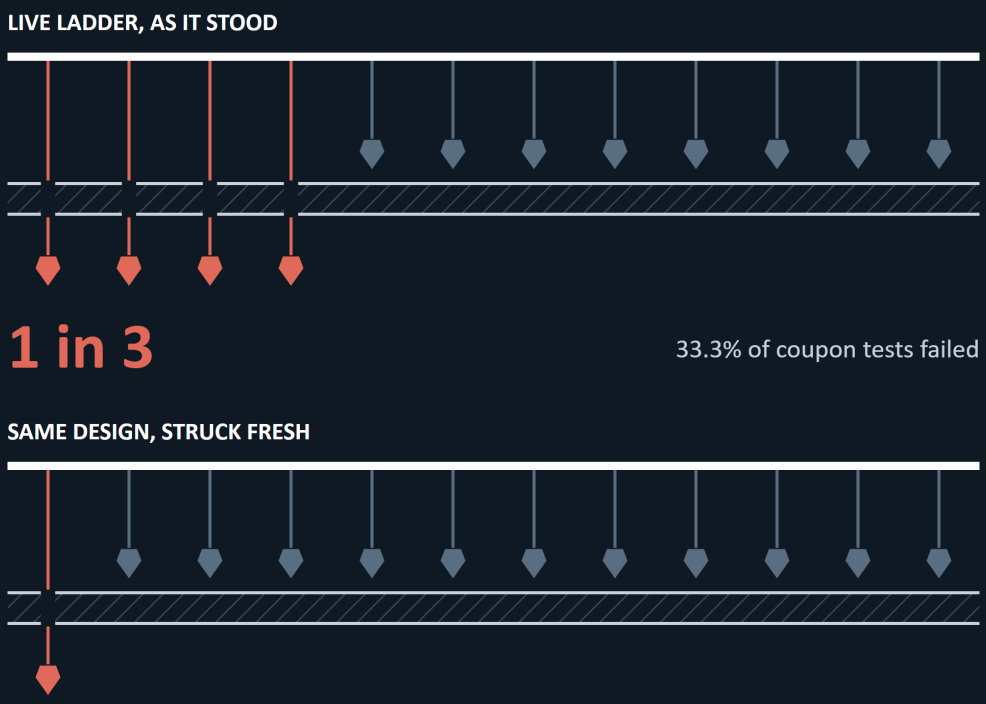
For the 2022 decline, we compared each fund's live ladder with a ladder struck fresh at the start of the window.

- **The worst-of fund:** 33.3% of live tranches failed, against 8.3% for a fresh ladder: 25.0 percentage points worse, because many tranches were already close to their barriers.
- **The single-index fund:** 10.7% against 13.5%: 2.8 points better, because its ladder already carried some cushion.

Two funds with similar headline terms carried very different risk into the same year. The headline barrier alone would not have shown it; the ladder's distance-to-barrier distribution would.

In 2022, where the worst-of ladder stood turned 1 in 12 into 1 in 3

The worst-of fund's live ladder against the same design struck fresh at the start of its window (11/8/21 to 11/8/22)



Each line: one twelfth of the ladder's coupon tests. Floor: the coupon barrier.

Source: Three Horizons Capital analysis. The single-index fund went the other way: 10.7% live against 13.5% fresh.

05 Four hypothetical notes show how the levers behave

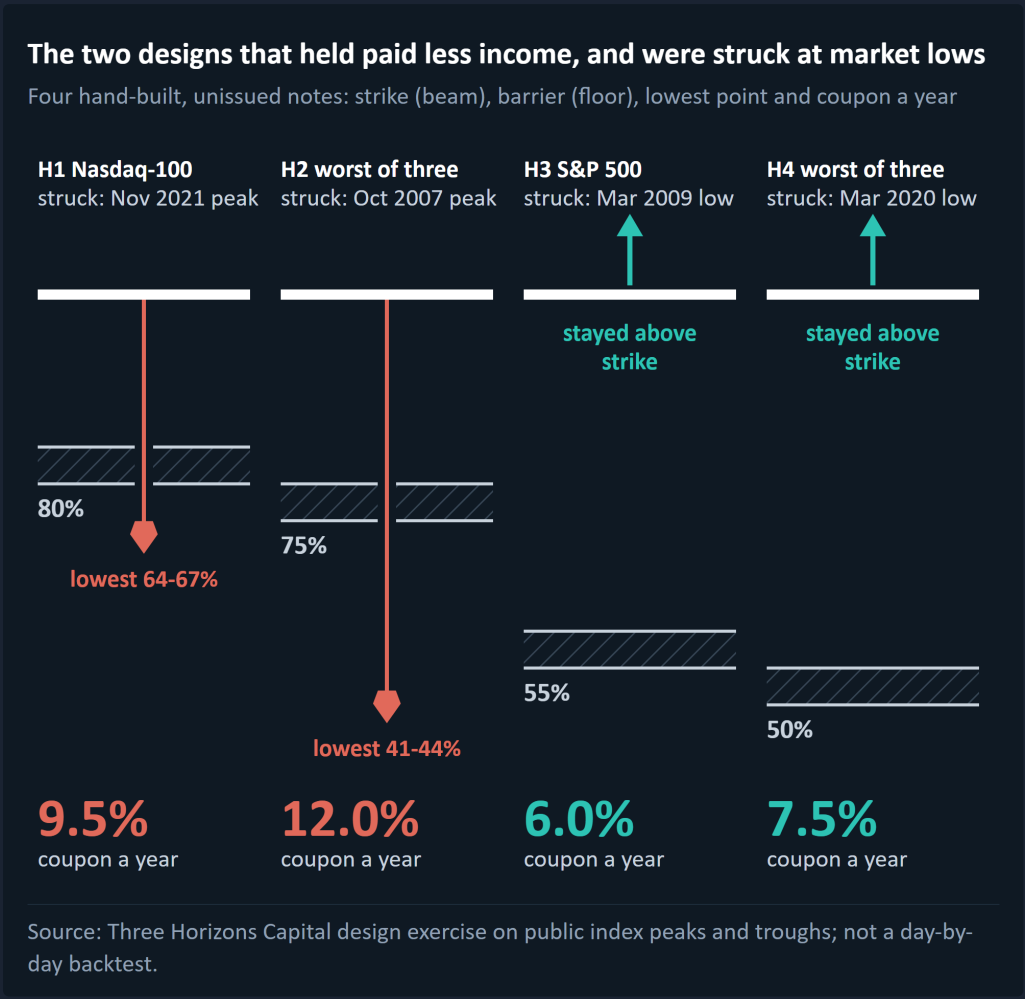
To isolate each lever, we built four unissued notes on the same mechanics and walked them through well-documented index peaks and troughs. They are illustrations, not a backtest.

	H1	H2	H3	H4
Reference	Nasdaq-100	Worst of three	S&P 500	Worst of three
Struck at	Peak, 19 Nov 2021	Peak, 9 Oct 2007	Trough, 9 Mar 2009	Trough, 23 Mar 2020
Barrier	80%	75%	55%	50%
Coupon a year	9.5%	12.0%	6.0%	7.5%
Lowest point	about 64-67% of strike	about 41-44%	stays above strike	stays above strike
Outcome	Breached about 7 months in; most coupons missed	Breached about 13 months in; principal at risk at maturity	Full coupons until called	Full coupons until called

Three readings, stated plainly:

- **The failures show the mechanism.** H1 and H2 use barriers shallower than today's 60-70%, so they show how a note fails rather than predicting how today's funds would.

- **The successes owe most to timing.** H3 and H4 were struck at market lows and stayed above strike, so their deep barriers were never tested. They show the value of a well-timed strike most clearly.
- **Depth has a price.** The two designs that held paid 6.0% and 7.5% a year; the two that failed promised 9.5% and 12.0%. A deeper barrier buys resilience with income.



06 A design brief in four levers

Each lever answers one weakness in current practice.

- **Set the barrier on drawdown history, not a round number.** Calibrate depth to the largest sell-offs on record for the reference, and show the income that depth costs.
- **Time new strikes to valuation or volatility, not only the calendar.** Strike more tranches after a decline and fewer after a long rally, so the ladder does not load up at peaks.
- **Price the worst-of dispersion into the barrier.** A worst-of basket needs a deeper barrier than a single index, or more closely related indices, to offset its weakest-leg risk.
- **Make the memory coupon standard.** Without it, the call works for the investor at once and the coupon barrier works against them for good. The category's newest designs already store missed coupons.

This is design logic tested against known historical episodes. A manufacturer-grade version needs a day-by-day backtest across the full history, swap counterparty and fee terms, and legal review of the barrier and memory mechanics in the target wrapper.

07 What changes for product teams and buyers

- **Read the ladder, not only the term sheet.** Ask for the distance-to-barrier distribution of the live tranches; it showed the 2022 risk the headline barrier did not.
- **Treat worst-of as a reason for a deeper barrier.** Hold a worst-of fund to a stricter depth than a single-index fund of similar tenor.
- **Test depth against the drawdowns that have happened.** A 30-40 point cushion sits inside sell-offs the S&P 500 has already seen, and the income on offer should be read with that in mind.

> **WHERE DO YOUR AUTOCALLABLE LADDERS SIT?**
>
> Send us the funds you hold or the notes you are designing. We'll map each ladder's distance to its barrier and run it through past sell-offs, and walk you through it on a call in the coming weeks. Get in touch

08 What this does and does not show

This is a design exercise. It describes no issued or issuable security and is not a view on either fund's future returns.

- **Today's ladders, past episodes.** The stress test applies the tranches held on 16 October 2026 to historical windows. Both funds launched after these episodes, and the single-index fund's index history before February 2022 is the index publisher's backtest.
- **Contract events, not losses.** A failed coupon test is a contractual event, counted by tranche. It is not an ETF total return and not necessarily realised income loss.
- **Peak and trough levels.** The four hypothetical notes use public index peaks and troughs, not a day-by-day reconstruction. H1's index level at its exact maturity date was not independently confirmed.
- **Two funds.** The issuers' other related funds were not screened.

09 What we measured

- **Funds:** Calamos Autocallable Income ETF (CAIE, single-index, launched June 2025) and FT Vest Laddered Autocallable Barrier & Income ETF (ACYN, worst-of S&P 500, Nasdaq-100 and Russell 2000, launched February 2026), from public fund documents. Calamos's growth fund (April 2026) carries the memory coupon.
- **Stress test:** rolling 12-month windows applied to each fund's tranche ladder as held on 16 October 2026; share of tranches failing the coupon barrier in each episode. The 2022 comparison sets each live ladder against a ladder struck fresh at the start of its window (single-index 1/3/22 to 1/3/23; worst-of 11/8/21 to 11/8/22).
- **Hypothetical notes:** 100% autocall barrier checked quarterly, one combined coupon and maturity barrier checked monthly, no memory, as in both funds' term-sheet language. Struck at the S&P 500's 9 October 2007 high (1,565.15), 9 March 2009 low (676.53) and 23 March 2020 low (2,237.40), and the Nasdaq-100's 19 November 2021 high.
- Source: Three Horizons Capital analysis of tranche-level stress-test results and public fund documents; public index data. Past performance is not indicative of future results. This paper is research, not investment advice, and not an offer or a recommendation to buy or sell any security.