BREAKING STRUCTURE PRESENTS

Cross-Asset *Hedging.*

The portfolio-level view. How desks think about books, not trades, and where the structural risk lives.

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// EQUITY · RATES · FX · COMMODITIES · CRYPTO //

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SECTION 01

The book vs trades distinction.

> *Retail traders look at a list of positions. Institutional desks look at a book. The difference is not vocabulary; it is the cognitive shift from individual decisions to aggregate exposure. The shift is what makes cross-asset hedging possible.*

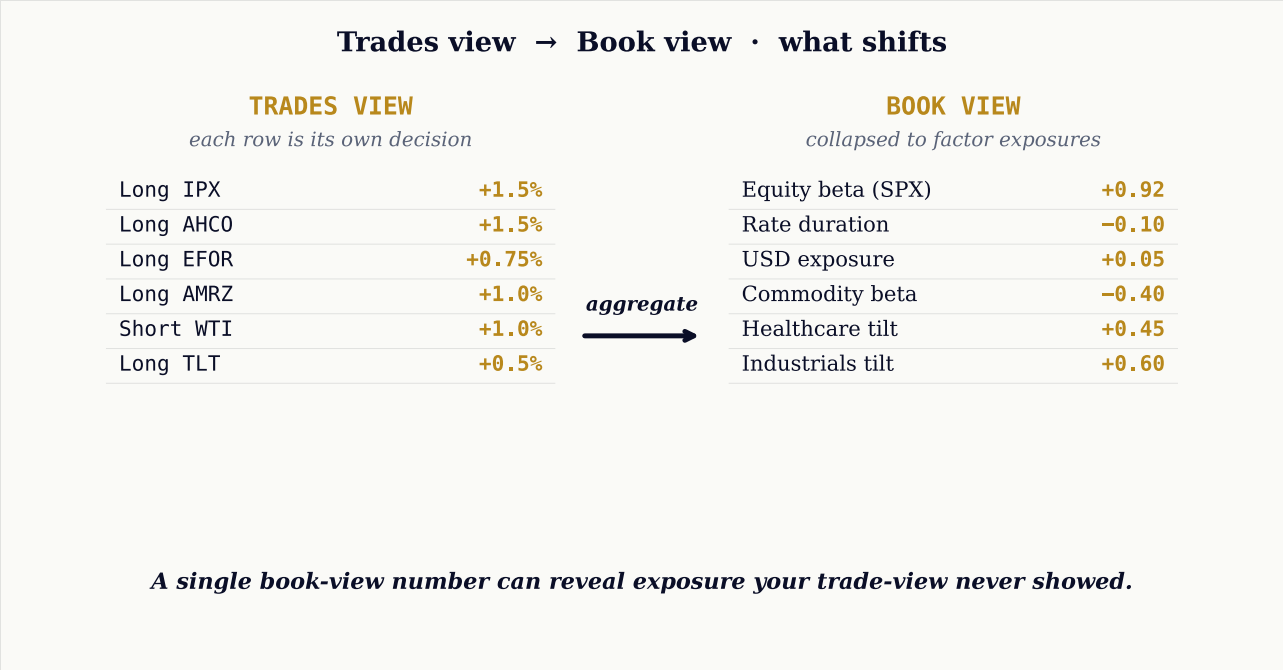


Figure 01 · Trades view to book view.

SAME SET OF POSITIONS, TWO WAYS OF LOOKING AT THEM. THE LEFT COLLAPSES TO A LIST OF BETS. THE RIGHT COLLAPSES TO SIX FACTOR NUMBERS. THE FACTOR VIEW REVEALS EXPOSURES THE TRADE-VIEW NEVER SHOWED: IN THIS ILLUSTRATIVE BOOK, FIVE LONGS AND ONE SHORT AGGREGATE TO +0.92 NET EQUITY BETA DESPITE "DIVERSIFICATION" ACROSS FIVE DIFFERENT NAMES.

The cognitive shift is the entire point of this issue. A trader with five long Tier C single-name equity positions, each at 1% NAV per the sizing matrix in Issue 05, has 5% NAV at risk on individual trades. The factor view says the same trader has roughly 5% NAV exposure to **equity beta**: when the broader tape sells off, all five names move down together regardless of their individual theses. The thesis-level diversification was diversification within the equity factor, not diversification across factors.

This is where institutional and retail diverge most sharply. Institutional desks built around multi-strategy mandates know what their factor exposures are at all times. Retail traders typically do not, because the platforms and the discourse focus on trades, not books. The fix is mechanical: **aggregate the book into factors every week**. The aggregation takes 15 minutes. The information it produces is the input for every hedge decision that follows.

SECTION 02

Factor exposure · what your book really owns.

> *Six factors describe most retail-accessible books with useful precision. Each factor has a standard measurement, a standard hedge instrument, and a standard sizing approach. The framework collapses thirty positions into six numbers.*

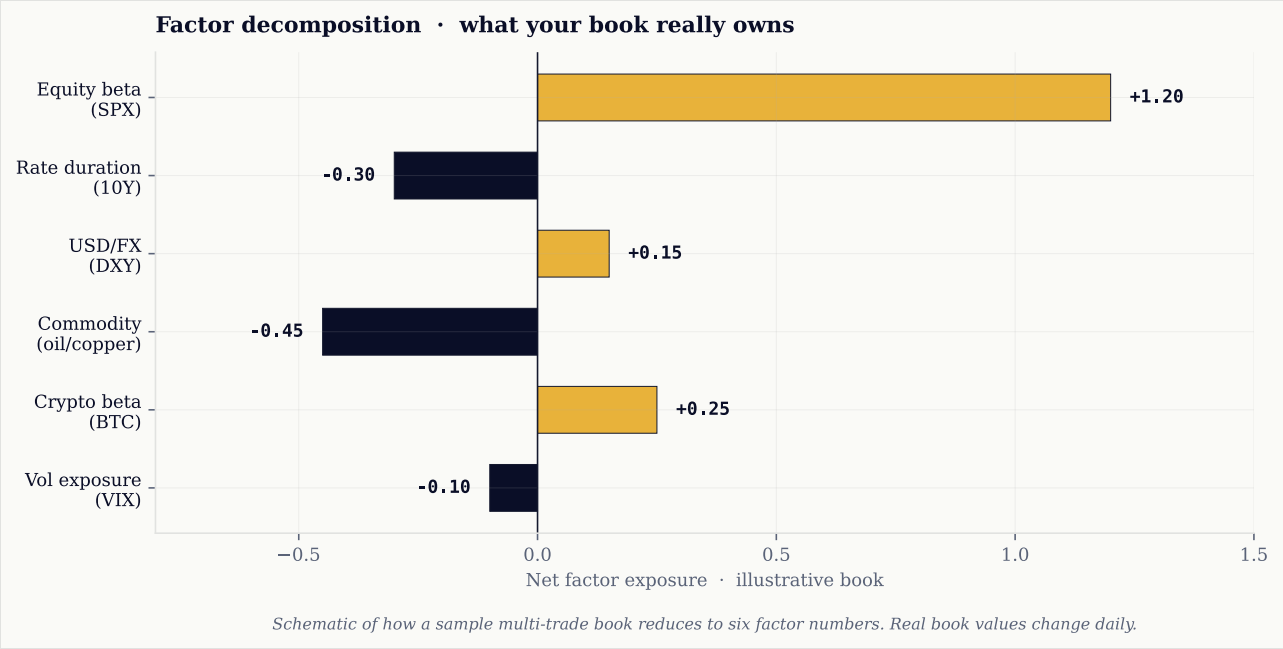


Figure 02 · Factor decomposition of an illustrative book.

SIX FACTORS. EACH BAR SHOWS THE NET EXPOSURE AGGREGATED ACROSS ALL POSITIONS WEIGHTED BY BETA AND SIZE. THE BOOK IN THIS EXAMPLE HAS +1.20 NET EQUITY BETA (LONG-HEAVY), -0.30 DURATION, -0.45 COMMODITY EXPOSURE (SHORT OIL/COPPER), MODEST FX AND CRYPTO EXPOSURE, AND A SMALL SHORT-VOL POSITION. THE FACTOR VIEW IS WHAT TELLS THE TRADER WHERE THE STRUCTURAL RISK LIVES.

The six factors

- **Equity beta.** Sum of (position weight × beta-to-SPX) across all equity positions. For Tier A index trades, beta = 1.0. For Tier C single-name, betas typically 0.6-1.5. The sum is the net SPX-equivalent exposure.
- **Rate duration.** Sum of (position weight × duration) across rate-sensitive positions. TLT has ~17-year duration. ZN futures have shorter effective duration. The sum measures sensitivity to a 1% parallel shift in the yield curve.
- **USD/FX.** Net exposure to the trade-weighted dollar. Long EUR/USD is short USD. The sum tells you which way a DXY move helps or hurts.

- **Commodity beta.** Sum of exposure to oil, copper, gold, agricultural. Each commodity has its own factor weight, but for retail purposes a single composite is usually sufficient.
- **Crypto beta.** Long or short BTC-equivalent. Most crypto positions correlate with BTC over short windows.
- **Vol exposure.** Long or short volatility itself, typically measured through VIX-equivalent or DVOL-equivalent positions. Most options-heavy books carry an unintended vol exposure that is invisible in trade-by-trade analysis.

The aggregation is mechanical and weekly. For each position, multiply position-NAV by the factor beta. Sum within each factor. The six output numbers are the book at the factor level. **Hedging decisions get made from those six numbers, not from the underlying list of trades.**

SECTION 03

Typical cross-asset correlations.

> *Cross-asset correlations are not fixed. They are conditional on regime. What follows is a typical historical mid-range, not a live measurement. The numbers should be re-derived from current data before sizing any hedge.*

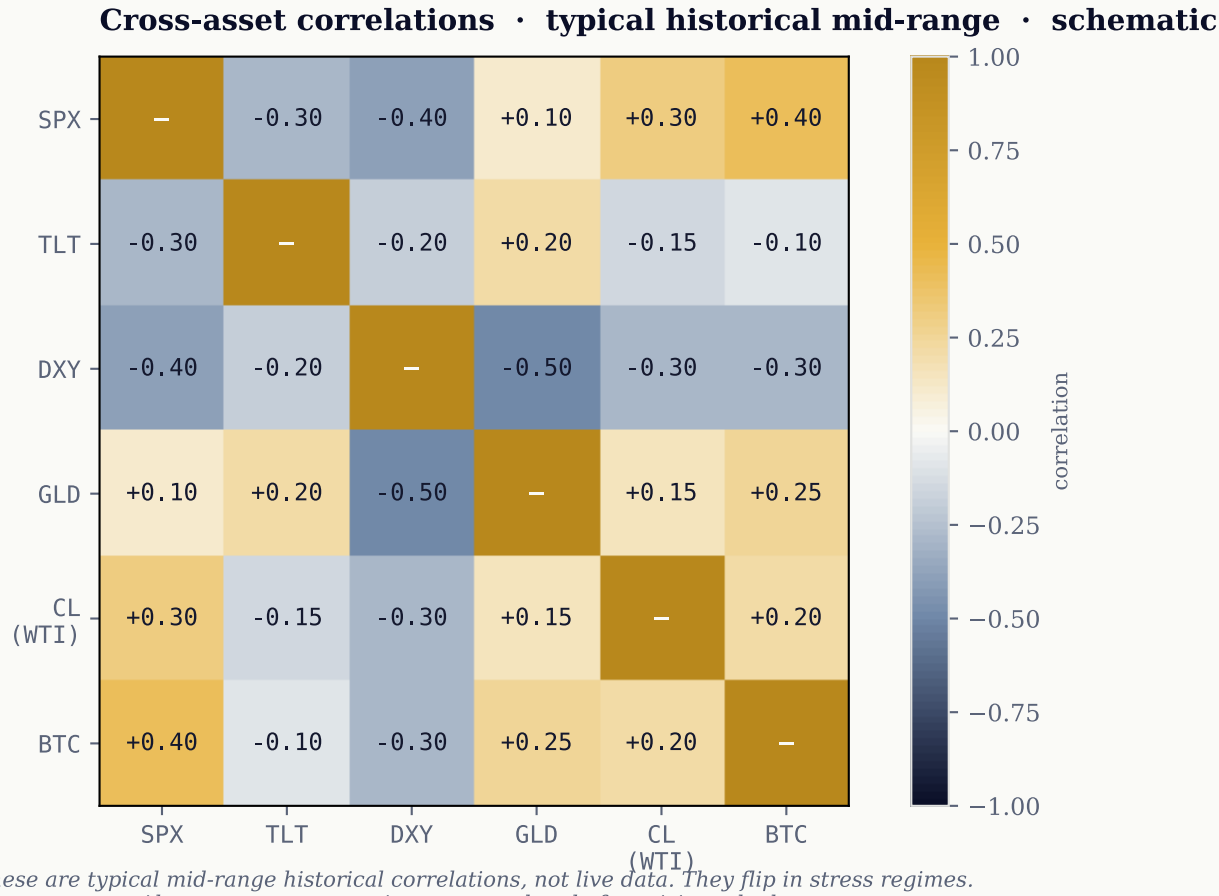


Figure 03 · Typical cross-asset correlation matrix.

MID-RANGE HISTORICAL VALUES ACROSS SIX MAJOR ASSET PAIRS. SPX-TLT TYPICALLY NEGATIVE (RATES AS EQUITY HEDGE). SPX-DXY TYPICALLY NEGATIVE (RISK-ON DOLLAR WEAKNESS). SPX-GOLD NEAR ZERO IN NORMAL REGIMES. SPX-BTC POSITIVE BUT VARIABLE. RECOMPUTE AGAINST CURRENT DATA BEFORE SIZING ANY SPECIFIC HEDGE.

How to read the matrix

Each cell shows the typical mid-range correlation between two assets over rolling multi-year windows in normal regimes. Three patterns are useful:

- **Negative correlations are the candidate hedges.** SPX and TLT have typically been negatively correlated, which is why TLT is the canonical equity hedge. SPX and DXY are typically negatively correlated, which is why "risk-on" implies a weak dollar.
- **Near-zero correlations are the candidate diversifiers.** SPX and Gold near zero in normal regimes means Gold can sit alongside equity without amplifying either direction.
- **Positive correlations are the candidate offsets to avoid.** SPX and BTC have moved positively together for most of the post-2020 cycle, which means a long BTC position adds equity beta, not diversifies it.

The single most important caveat is the next section: **these correlations flip in stress regimes**. The matrix in Figure 03 is the baseline. The stress version is what determines whether the hedge actually works in the regime where it is needed most.

SECTION 04

Regime correlation flips.

> *The single most expensive mistake in retail hedging is assuming that yesterday's correlations describe today's hedge. In stress regimes, "everything sells off together" is the cliche because, mechanically, the historical correlations flip toward +1 across most pairs.*

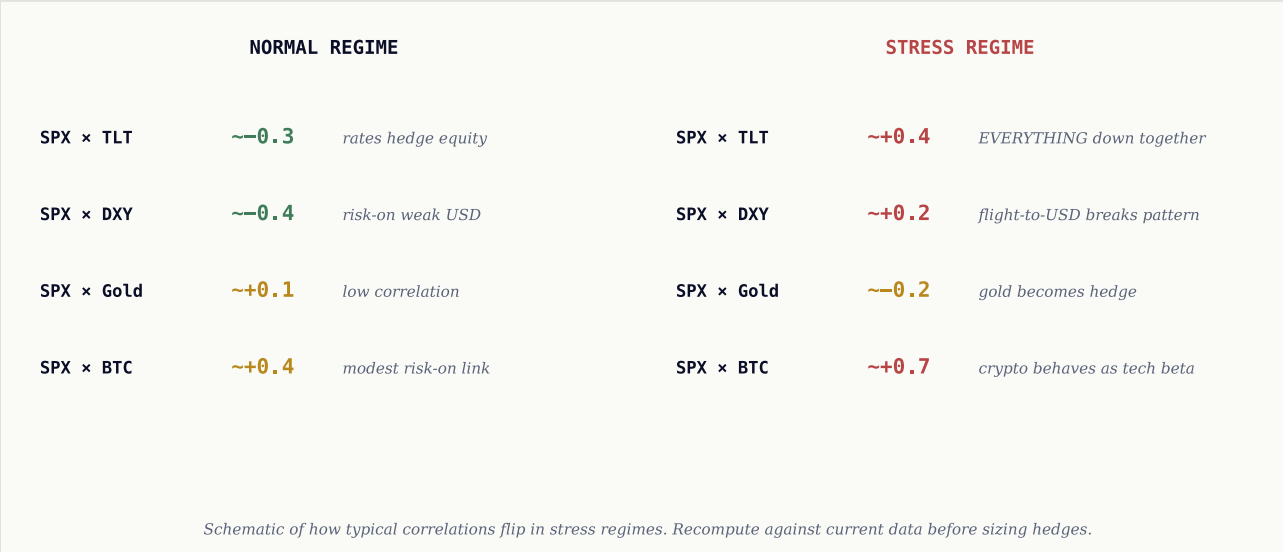


Figure 04 · Normal regime vs stress regime correlations.

THE SAME FOUR PAIRS IN TWO REGIMES. SPX-TLT TYPICALLY NEGATIVE IN NORMAL MARKETS BECOMES POSITIVE IN STRESS (EVERYTHING SELLS OFF TOGETHER). SPX-BTC, TYPICALLY MODESTLY POSITIVE, HAS HISTORICALLY INTENSIFIED IN STRESS AS CRYPTO BEHAVES LIKE TECH BETA ON MARGIN CALLS. RECOMPUTE AGAINST CURRENT DATA BEFORE SIZING ANY HEDGE.

Why correlations flip

Three structural reasons:

- **Margin calls force selling across asset classes.** Leveraged investors hit by losses in one asset class sell whatever is liquid to meet margin requirements. The selling is mechanical and indiscriminate.
- **Liquidity preference dominates valuation.** In stress, capital flees to USD and short-duration Treasury bills. Everything else, including assets that would normally hedge equity, gets sold.
- **Correlation regimes shift around vol-of-vol events.** When the VIX-of-VIX (or MOVE-of-MOVE, or DVOL-of-DVOL) spikes, the relationship between vol and the underlying changes. Hedges built for one vol regime do not work in the other.

The implication for retail hedging is concrete: **hedges sized for the normal regime are mechanically inadequate in stress regimes**. The fix is not to hedge more in normal times. The fix is to hold positions in

instruments whose stress-regime correlations remain negative, even if their normal-regime correlations are not as helpful.

The instruments that have historically maintained negative correlation to equity in stress include far-OTM SPX puts, VIX call options at strikes well above current spot, long-dated MOVE call options, and to a lesser extent gold. The list is short. Most "diversifiers" are not stress-diversifiers, regardless of how they look on a normal-regime correlation matrix.

SECTION 05

Equity hedges.

> *Equity beta is the largest single factor exposure for most retail books, because most retail books are long-only. The hedge candidates are well-understood, but each has trade-offs.*

The instrument options

- **SPX put options (or SPY equivalents).** Direct insurance against equity downside. Defined risk (premium paid). Decays over time. The most common retail hedge structure. Cost: typically 1-3% of insured notional per year for far-OTM protection.
- **VIX call options.** Long-volatility instrument that benefits from spikes in implied vol. Often more efficient than SPX puts during fast crashes (VIX moves faster than SPX falls in early stress). Cost: highly variable; can be cheap or expensive depending on current VIX level.
- **Sector ETF shorts.** Short XLY, XLF, or XLK as a partial hedge against long single-name positions in those sectors. Lower cost than options but uncapped upside on the short side.
- **Inverse ETF positions.** SH (1x inverse SPY) for retail accounts without options access. Daily-reset mechanics produce decay over long horizons; use as short-term hedge only.
- **Pair shorts within the same sector.** Long a high-conviction Tier C name; short a lower-quality name in the same sector. Removes most sector beta while preserving idiosyncratic alpha. Higher operational complexity but lowest cost when executed well.

Sizing the equity hedge

The mechanical sizing rule: **hedge notional times (1 - alpha estimate) should approximately offset net long equity beta**. If the book has +0.92 equity beta on $100K NAV ($92K of SPX-equivalent exposure), a 50% hedge requires roughly $46K of SPX-equivalent short. In SPX put options at, say, 5% OTM, this might translate to one or two contracts depending on the strike. The arithmetic is straightforward; the discipline is doing it weekly.

SECTION 06

Rates hedges.

> *Rate duration is the factor most retail traders forget they have. A long-only equity book has implicit rate exposure: rising rates compress equity multiples, falling rates expand them. The rate hedge is partly a hedge against the rate cycle's effect on equity.*

The instrument options

- **TLT (long-duration Treasury ETF).** The canonical retail rate hedge. Long TLT benefits when long rates fall. Effective duration around 17 years.
- **IEF, IEI, SHY (intermediate and short-duration Treasury ETFs).** Smaller duration exposure than TLT, less volatility. Useful for traders who want some rate hedge without the TLT volatility.
- **ZN, ZB futures.** Direct exposure to 10-year and 30-year Treasury futures. Lower-cost than ETFs at scale (no expense ratio, leverage built in), but require futures accounts and margin understanding.
- **MOVE-conditioned strategies.** When the MOVE index (Treasury-equivalent of VIX) is elevated, rate hedges are more expensive. Buy rate vol when MOVE is depressed and the curve is steepening.

The MOVE-conditioned read

The MOVE index measures implied volatility on Treasury options. It is the rate-market equivalent of VIX. When MOVE is depressed (below historical median), rate vol is cheap, and long-vol rate structures (TLT calls, ZN options) are good value. When MOVE is elevated, rate vol is expensive, and the hedge can be deferred or sized smaller. The rule: **buy cheap volatility, fade expensive volatility**, conditioned on whether the book actually needs the hedge.

For the convergence framework specifically, rate hedges matter most for books concentrated in rate-sensitive Tier C names: REITs, banks, utilities, long-duration growth equity. Books concentrated in industrials, energy, or healthcare have less rate sensitivity and a smaller rate-hedge budget.

SECTION 07

FX hedges and currency-of-record.

> *FX exposure is the most-overlooked book-level risk for retail traders, particularly those holding non-USD-denominated instruments while reporting P&L in USD (or vice versa). The FX move can be the entire P&L, larger than the underlying trade thesis.*

The currency-of-record problem

Concrete example: a US-based retail trader takes a long position in AMRZ. AMRZ trades on the NYSE in USD, but is a Swiss company. The price reflects USD-CHF FX as well as the underlying business. The trader's stated thesis is on the business. The actual P&L is on both. If CHF strengthens against USD by 5% during the holding period, the position can show a 5% gain that has nothing to do with the underlying thesis.

The fix is one of three:

- **Hedge the FX exposure.** A short EUR/USD or short CHF/USD position sized to offset the FX-component of the equity position. Requires understanding the FX beta of the equity, which is rarely 1.0 but is rarely zero either.
- **Accept the FX as part of the thesis.** If the trader has a directional view on FX that supports the equity trade, the FX is a feature, not a bug. The discipline is making the FX view explicit in the thesis field.
- **Avoid cross-currency exposure entirely.** Limit the book to instruments whose underlying business and reporting currency match the trader's currency-of-record. Operationally simpler but reduces the opportunity set.

DXY as the umbrella factor

For US-based traders, most FX exposure can be summarized in a single number: DXY (the trade-weighted dollar index). A book with multiple non-USD-denominated equity positions has aggregate DXY beta. The hedge instrument options include UUP (long DXY ETF), short EUR/USD, short EUR-equivalent baskets. Sizing follows the same factor-decomposition logic as equity beta and rate duration.

SECTION 08

Commodity and crypto hedges.

> *Commodity and crypto exposures are smaller for most retail books but worth treating as separate factors because their stress-regime behavior is distinct from equity.*

Commodity hedges

A book with exposure to energy names (XLE, individual oil and gas equities) has implicit long-oil exposure. The natural hedges:

- **Short WTI futures (CL) or long inverse oil ETFs.** Direct hedge to long-oil exposure. Sized to offset the energy-sector component of the book.
- **Long refiner positions paired with short upstream.** Refiners benefit from cheaper oil; producers benefit from more expensive oil. The pair has lower aggregate oil-price beta than either leg alone.
- **Long copper paired with short oil.** A way to hedge industrial-commodity exposure if the book has both copper-positive and oil-positive single-name positions.

Crypto hedges

For books with crypto exposure (long BTC, ETH, or DeFi positions), the hedge candidates are limited. The instrument options:

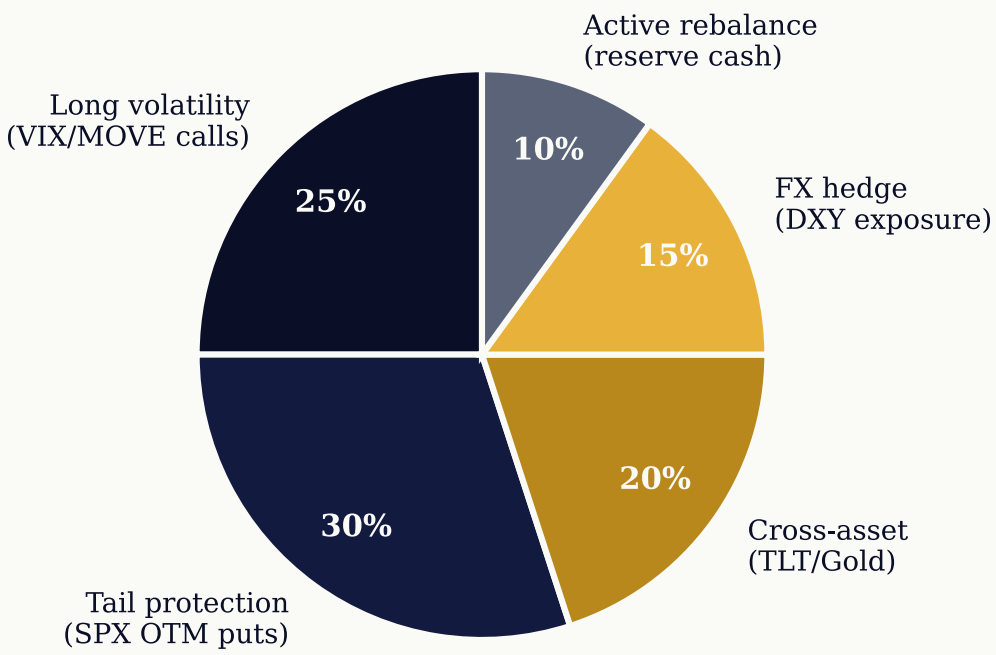
- **Short BTC futures or short BTC perp.** Direct hedge against BTC beta. Funding-rate-conditioned (positive funding favors longs; negative funding favors shorts).
- **BTC put options (Deribit, Greeks.live).** Defined-risk insurance against tail moves. Often expensive relative to comparable equity insurance because crypto realized vol is higher.
- **Stablecoin allocation.** Within a crypto-native book, allocating to stablecoins is the equivalent of moving to cash in an equity book. Removes BTC beta entirely on the allocated portion.
- **ETH/BTC ratio trade.** Pair-trade structure: long one, short the other, sized to neutralize aggregate BTC beta while expressing a relative view.

The crypto-specific caveat: **crypto correlations to equity have intensified post-2020**. The framework reads BTC as carrying equity beta plus idiosyncratic crypto risk, not as a diversifier. A book that is long both Tier C equity and Tier D BTC has more equity beta than the trade-view shows.

SECTION 09

The hedging budget.

> *Hedges cost money. The question is not whether to hedge but how much to spend on hedges annually as a percentage of NAV. Most institutional desks budget 2-4% of NAV annually for portfolio-level hedging. Most retail books spend either zero or far too much.*



Illustrative hedging budget allocation · ~2-4% of NAV annually

Allocation shifts based on regime: more tail protection in low-vol, more rebalance in high-vol.

Figure 05 · Illustrative hedging budget allocation.

ROUGHLY 2-4% OF NAV ANNUALLY DIVIDED ACROSS LONG VOLATILITY (VIX OR MOVE CALLS), TAIL PROTECTION (SPX OTM PUTS), CROSS-ASSET HEDGES (TLT OR GOLD), FX HEDGES, AND ACTIVE REBALANCE RESERVE CASH. ALLOCATION SHIFTS BASED ON REGIME: MORE TAIL PROTECTION IN LOW-VOL REGIMES, MORE REBALANCE CASH IN HIGH-VOL.

How to think about the budget

The hedging budget is a separate line item from the trading book. Treat it like an insurance expense: you do not expect to "make money" on hedges over a multi-year window. You expect to lose the premium gradually in calm markets and recover much more than the premium in stress. The breakeven analysis is multi-year, not per-trade.

The allocation between hedge types follows three rules:

- **Long volatility (25-30%).** VIX or MOVE call options structured for tail-stress payoff. Cheapest when vol is low, which is when you should be buying.
- **Tail protection (30%).** SPX or NDX OTM puts at 8-15% out of the money. Expires worthless in calm markets; pays large multiples in crashes.
- **Cross-asset diversifiers (20%).** TLT, Gold, defensive sector ETFs. Cheap in normal markets; uncertain payoff in stress.
- **FX hedges (15%).** Sized to neutralize non-USD exposure in the book.
- **Active rebalance reserve (10%).** Cash held back for opportunistic deployment when prices dislocate. Often the highest-return component of the budget.

The percentages shift with regime. In low-vol environments (VIX in the teens, MOVE depressed), the optimal allocation is heavier on long volatility because protection is cheap. In high-vol environments, the optimal allocation shifts toward rebalance cash because protection is expensive and the opportunity to deploy capital cheaply is what matters most.

SECTION 10

Vol-conditioned hedge sizing.

> *The single most counter-intuitive rule in hedging is that you buy more protection when it is cheapest, not when you are most worried. The cheapest protection is in low-vol environments, when retail traders typically think they do not need it.*

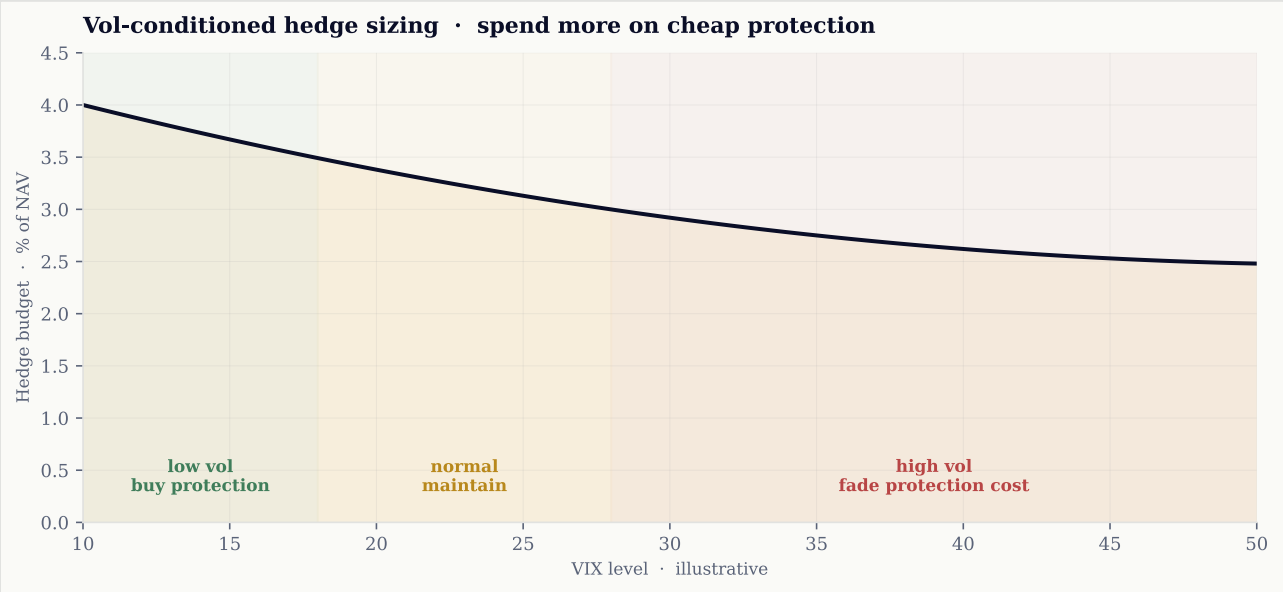


Figure 06 · Vol-conditioned hedge sizing.

HEDGE BUDGET AS A FUNCTION OF VIX LEVEL. LOW VIX (AROUND 10-18) IS THE BUYING WINDOW: LONG-VOL STRUCTURES ARE CHEAP AND THE ASYMMETRIC PAYOFF IS LARGEST. AS VIX RISES ABOVE 28, PROTECTION COST RISES FASTER THAN THE MARGINAL BENEFIT, AND THE DISCIPLINE SHIFTS TO MAINTAINING POSITION RATHER THAN ADDING.

The three regimes

Low vol (VIX below 18). The buying window. Long-volatility structures are cheap; far-OTM puts trade at low premium. Most of the annual hedge budget gets deployed in this regime. The trader's psychology resists this ("nothing is wrong, why hedge"), and the framework explicitly counters that resistance.

Normal (VIX 18-28). Maintain existing hedges. Roll expiring positions out. Add modestly to long volatility if VIX is approaching the upper bound. The discipline is steady-state, not aggressive deployment.

High vol (VIX above 28). Fade the protection cost. Existing hedges are now expensive; new hedges are even more expensive. The right move is to hold what is in place, monetize where appropriate (sell calls against existing protection), and shift the marginal hedging budget toward rebalance cash that can deploy if prices dislocate further.

Same logic applies to MOVE (rates), DVOL (crypto), and CVIX (FX). The vol of each asset class tells you whether protection in that asset class is cheap or expensive. **Buy cheap volatility, fade expensive volatility**, in the asset class where you have exposure.

SECTION 11

Common mistakes.

> *Five patterns are responsible for most retail hedging failures. None of them are about being wrong on direction. All of them are about structural misunderstanding of what a hedge is supposed to do.*

1. Over-hedging.

The trader buys protection on every position. The book becomes a flat collection of long-short pairs that earn no return. The fix is the factor view from Section 02: hedge factor exposures, not individual trades. Five long Tier C names need one equity-beta hedge, not five.

2. Hedging the wrong factor.

The book is long energy single-names; the trader hedges with SPX puts. The hedge is technically equity beta, but the energy-specific risk it does not cover is the actual risk. The fix is to hedge the dominant factor: short XLE or short WTI, not short SPX.

3. Currency-of-record errors.

Trading non-USD instruments without considering FX. The P&L is part underlying-thesis, part FX move. The fix is mechanical: identify the FX component of every non-USD position, decide explicitly whether to hedge it, and document the decision in the trade plan from Issue 06.

4. Buying protection at the wrong time.

The trader buys SPX puts after the VIX has already moved from 14 to 28. The puts are now expensive; the marginal protection is small relative to cost. The fix is the vol-conditioned sizing from Section 10: **buy protection when VIX is below 18, not above 28**.

5. Not rebalancing the hedge ratio.

The hedge was sized correctly at trade time but no longer matches the book's current factor exposure. Hedges become stale within weeks. The fix is weekly: re-decompose the book, recompute factor exposures, adjust hedge sizes. The aggregation routine from Section 02 is what makes this operational.

SECTION 12

Resources and what is next.

FREE TOOLS

- **Portfolio beta calculators** (Portfolio Visualizer, Morningstar). Provide equity beta and basic factor decomposition.
- **Spreadsheet factor model.** A column per position, factor betas as rows, simple sum-product for each factor. Sufficient for most retail books.
- **CBOE / Cboe Global Markets data.** VIX, MOVE, VVIX, SKEW historical for vol-regime context.
- **FRED (Federal Reserve Economic Data).** DXY, yield curve, commodity indices, all free and well-documented.

PAID TOOLS

- **SpotGamma, Menthor Q, Unusual Whales.** Real-time gamma and options-flow context for sizing tail protection.
- **Bloomberg Terminal or Refinitiv.** Institutional standard for cross-asset factor decomposition.
- **Riskalyze, Kwanti.** Retail-accessible portfolio risk and factor analytics.

The Stryk angle on this issue.

Stryk shows live factor exposure across the book at all times: equity beta, rate duration, USD exposure, commodity beta, crypto beta, vol exposure. The hedge recommendation engine surfaces structures sized to the current factor mix rather than to rule-of-thumb percentages. **The book view is the default view**, not a separate screen.

Breaking Structure subscribers go to the front of the early access line by default. Until Stryk ships, the spreadsheet factor model is the manual version. *Build the habit now. The workflow ports.*

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What is next in the series

Issue 08 is the closing capstone: **Smart Money, Done Right**. The polemic that maps every SMC vocabulary concept (change of character, displacement, FVG, order block, breaker) back to the positioning, mechanics, and

flow data that actually cause them. The framework's central claim, made plainly: *the chart is the symptom; the dealer book is the cause*.