

What Is the Risk-Reward Ratio?

How the risk-reward ratio works, the win rate it demands, and why crypto widens the gap between planned and realized outcomes.

Alain AI Lab Research · Published July 15, 2026 · 10 min read

The risk-reward ratio is one of the first concepts a trader meets and one of the last they fully understand. In its plainest form it compares how much you stand to lose on a position against how much you stand to gain if the trade works. A ratio of 1:2 means you are risking one unit to make two — a stop-loss placed to cap the downside at \$10 against a target set to capture \$20 of upside. The arithmetic is trivial. The discipline it demands, and the way it interacts with how often you are actually right, is where most of the difficulty lives.

This report treats the ratio as a planning instrument rather than a promise. It sets out the direction convention explicitly, works through the win rate each ratio quietly requires, connects the number to expectancy, and then examines why crypto markets — with their volatility, leverage, funding costs, and thin liquidity — make the distance between a planned ratio and a realized one structurally wider than in traditional markets. It pairs naturally with our broader [risk-management framework for crypto investors](#), which places the ratio inside a wider set of controls.

AT A GLANCE		
DEFINITION	CONVENTION HERE	BREAKEVEN AT 1:2
Potential loss vs potential gain	Risk:reward (1:2 = risk 1 to make 2)	Win one in three (1/3)
THE REAL TARGET	CRYPTO TWIST	WHAT IT IS NOT
Positive expectancy, not the ratio	Leverage adds liquidation risk	A probability of winning

Defining the ratio — and fixing the direction

Before any number is useful, the direction has to be pinned down, because the term is written both ways in practice. Throughout this report we use **risk:reward** — the loss is stated first. A 1:2 trade risks one unit to make two; a 1:3 trade risks one to make three. You will also see the inverse convention, reward:risk, where the same trade is written 2:1 or 3:1. Neither is wrong, but they invert each other, and mixing them silently is a reliable way to miscalculate everything downstream. Whenever you read a ratio, confirm which quantity is being named first.

The measurement itself is a distance problem. Risk is the gap between your entry and your stop-loss; reward is the gap between your entry and your target. Take an entry at \$100, a stop at \$90, and a target at \$120. The risk is \$10, the reward is \$20, and the ratio is 1:2. Nothing about the ratio depends on the size of your position or the price of the asset — it is purely the geometry of where you enter, where you admit you were wrong, and where you intend to take profit.

02

The win rate every ratio quietly requires

A favorable-looking ratio is meaningless until you ask how often the trade needs to succeed to break even. That threshold follows a clean formula. If **R** is the reward divided by the risk — a plain scalar, 2 for a 1:2 trade — then the breakeven win rate is $1 \div (1 + R)$. At 1:1, R is 1 and the breakeven is exactly 50%. At 1:2, R is 2 and the breakeven is one in three — not “about a third” but precisely 1/3. At 1:3, R is 3 and the breakeven falls to one in four, 25%.

This is the quiet discipline the ratio imposes. A 1:3 setup sounds generous, but it silently assumes you can win a quarter of the time on those terms — and if your targets are unrealistic, you may not clear even that low bar. The ratio and the hit rate are two halves of a single question, and looking at either alone tells you almost nothing about whether the strategy makes money.

A risk-reward ratio describes the shape of a trade's payoff. It says nothing whatsoever about the probability of reaching the target — and a beautiful ratio built on a price level the market will never touch is worth exactly zero.

03

From ratio to expectancy

The number that actually determines whether an approach is profitable is expectancy: the average result per trade across a large sample. Its form is **(win rate × average win) – (loss rate × average loss)**. This single expression dissolves the intuition that you must win often to make money. Consider a strategy that wins only 40% of the time but makes \$20 on winners and loses \$10 on losers: $(0.40 \times \$20) - (0.60 \times \$10) = \$8 - \$6 =$ a positive \$2 per trade. A low hit rate paired with a strong ratio is profitable.

The reverse is equally instructive and more dangerous, because it feels like winning. A strategy that wins 60% of the time but makes only \$1 on winners while losing \$2 on losers returns $(0.60 \times \$1) - (0.40 \times \$2) = \$0.60 - \$0.80 =$ a negative \$0.20 per trade. It loses money while being right most of the time. This is why 1:2 and 1:3 are offered as rules of thumb rather than laws: they are shorthand for keeping expectancy positive, and they only work when paired with a win rate you can genuinely sustain.

04

Placing stops and targets that mean something

Because the ratio is built from the entry, stop, and target, its quality is only as good as where those levels sit. Stops and targets chosen to hit a pleasing number are worthless; they must sit at points the market actually respects — prior support and resistance, structural highs and lows, or a volatility-based distance such as a multiple of the average true range, a common convention that scales the stop to how much the asset typically moves. Setting a stop too tight to flatter the ratio is a frequent error: it produces a lovely 1:5 on paper and then gets clipped by ordinary market noise long before the thesis has had room to play out.

The sequence matters as much as the placement. Defining the stop and target before entry forces you to price the exit while you are still calm, converting a vague conviction into a testable plan. The ratio, used this way, is less a prediction than a filter: if a setup cannot offer an acceptable ratio at technically defensible levels, it is telling you not to take the trade.

05

Ratio versus position sizing

The risk-reward ratio and position sizing are two distinct controls that beginners routinely conflate. The ratio governs the *shape* of a single trade; position sizing governs *how much* of your account is exposed to it. A common convention — again a convention, not a rule of

nature — is to risk only 1–2% of current equity on any one position. Given that limit, the size follows mechanically: **(account × risk %) ÷ (distance to stop)**, computed on your present balance rather than your starting capital.

Keeping the two separate is what lets a strong ratio survive contact with reality. You can pursue an aggressive 1:5 setup and still cap the account-level damage at 1% by sizing the position down. Chasing ever-more-extreme ratios rarely pays, because a 1:10 target usually comes with a correspondingly lower chance of being reached; the goal is not to maximize the ratio but to maximize expectancy, which is the ratio and the win rate multiplied together. Our note on [position sizing and risk-adjusted entry tiers](#) develops this second control in depth.

06

The mistakes that quietly reverse the math

Most damage to a sound ratio is self-inflicted after the trade is live. The most common failure is moving the stop — widening it as price approaches, which silently converts a 1:2 into a 1:1 or worse and abandons the entire premise of the plan. Its mirror image is cutting winners short: closing at half the target out of anxiety turns the same setup into a losing expectancy even when the analysis was correct. Both erase on the exit what the entry carefully constructed.

Two subtler errors compound these. The first is ignoring costs: fees, spreads, slippage, and, on leveraged positions, funding — each of which eats into the reward and inflates the effective risk, so that a clean 1:2 on paper is a thinner net ratio in practice. The second is judging the strategy on a single trade. Expectancy is a statement about a sample; a run of losses inside a positive-expectancy system is not evidence the system is broken, and a lucky win inside a negative one is not evidence it works. The ratio only earns its keep across many repetitions.

07

Why crypto widens the gap

Everything above holds in any market, but crypto stretches the distance between a planned ratio and a realized one. Volatility is the first amplifier: larger, faster price swings widen the plausible range for both stops and targets, so a stop that looks conservative can be reached in minutes. Leverage is the more serious one. It scales the position rather than improving the ratio, and it introduces liquidation — a forced close at the maintenance-margin level,

keyed to the exchange's mark price, that can wipe out the entire margin *before* your intended stop is ever touched. Leverage does not make a trade better; it makes the same trade capable of ruin.

Two structural features complete the picture. Funding rates on perpetual futures are periodic payments exchanged between longs and shorts — an ongoing cost or credit with no spot-market equivalent, charged on a schedule that varies by venue. And slippage means the exit price is rarely the exit you drew: a stop-market order guarantees execution but not price, so realized loss can exceed the plan, while a stop-limit protects the price but does not guarantee it fills at all. Crypto's round-the-clock trading removes the scheduled gaps of equity markets but not the violent moves that blow straight through a stop. The question of [whether to trade or hold for the long term](#) partly turns on how comfortably you can manage this wider gap.

08

What the ratio is — and what it is not

The risk-reward ratio is a planning and discipline tool. It forces you to define your exit before your entry, it exposes the win rate a strategy silently depends on, and it feeds the expectancy calculation that ultimately decides profitability. Used honestly, it is one of the cleanest ways to convert a hunch into a plan you can test and repeat.

What it is not is a forecast. It carries no information about the probability of reaching the target, offers no guarantee on any individual trade, and cannot rescue a strategy built on unrealistic levels or an unsustainable hit rate. In crypto especially, where volatility, leverage, funding, and slippage all pull the realized outcome away from the planned one, the ratio is best held as a fixed point of discipline rather than a source of confidence. This material is educational and analytical, not financial advice; it describes how the tool works, not what any individual should trade.

“The thoughts of the diligent tend only to plenteousness; but of every one that is hasty only to want.”

PROVERBS 21:5

This report defines the risk-reward ratio using the risk:reward convention, deriving the breakeven win rate from the identity $1 \div (1 + R)$ and expectancy from $(\text{win rate} \times \text{average win}) - (\text{loss rate} \times \text{average loss})$. Worked figures are illustrative round numbers chosen to demonstrate the arithmetic, not observed market data or recommendations. Crypto-specific mechanics — liquidation at maintenance margin, funding on perpetual futures, and the distinction between stop-market and stop-limit execution — are described qualitatively; no specific volatility percentages, funding intervals, or win-rate statistics are asserted where those figures vary by asset, venue, and period. Related reading: [risk-management strategies for crypto investors](#), [position sizing and entry tiers](#), and [trading versus holding long term](#). Research is educational and analytical, not financial advice.

Alain AI Lab — independent crypto & AI research.

intelligencecrypto.org · Research is educational and analytical, not financial advice.

© 2026 Alain AI Lab. All rights reserved.