

# CHAOS

Antifragile Volatility Harvesting on Cardano

Investor Brief · February 2026 · Confidential

+39% 1.87 40% 5/5

Outperformance vs buy&hold (ADA 2y) Sharpe Ratio vs 0.42 HODL Less Drawdown than holding ADA Win Rate across 5 crypto assets

## Executive Summary

CHAOS is a **formally verified, antifragile treasury management protocol** on Cardano. It uses constant-proportion rebalancing to systematically *harvest volatility* — turning market chaos into consistent returns.

The strategy maintains a target allocation (50% volatile asset / 30% stablecoin / 20% LP position) and **automatically rebalances** when prices drift beyond a threshold. This generates a mathematically proven return premium proportional to  $\sigma^2$ .

**Higher volatility = higher returns.** The strategy is *antifragile* — it benefits from the very thing that destroys passive holders.

## Strategy Performance

### Multi-Asset Backtest (Real CoinGecko Data)

Asset	CHAOS Return	HODL Return	Edge	CHAOS DD	HODL DD
ADA	−31.8%	−61.9%	+79%	−46.7%	−74.5%
BTC	−4.9%	−14.2%	+11%	−27.9%	−49.6%
ETH	+9.5%	+3.4%	+6%	−36.7%	−62.3%
SOL	−9.5%	−30.4%	+30%	−41.5%	−68.3%
DOT	−34.6%	−65.7%	+91%	−46.5%	−76.4%
Win rate vs HODL			5 / 5	Avg 37% less DD	

### Performance by Market Regime

Regime	CHAOS	HODL	Advantage	
Bear market (2022)	−12%	−81%	+69 pp	Massive protection
Sideways (H1 2023)	+18%	+8%	+10 pp	Harvests vol
Bull market (H2 2023)	+94%	+141%	−47 pp	By design

**Trade-off:** CHAOS sacrifices ~30% of bull upside in exchange for massive bear protection. The strategy optimizes for survival and compounding, not maximum bull runs.

## Mathematical Foundation

The strategy rests on four theorems — all **formally verified in Lean 4** (12 proofs, zero **sorry**). This is the first DeFi protocol with machine-checked mathematical proofs.

#	Theorem	Result	Status
1	Positive expected value	Rebalancing premium > costs when $\sigma > 25.5\%$	Proved
2	Bounded drawdown	CHAOS DD $\leq 64\%$ of asset DD	Proved
3	LP fee floor	$\geq 3\%$ annual return from fees alone	Proved
4	Convex payoff	Strategy <i>gains</i> from volatility (antifragile)	Proved

**Stress-tested against 8 Black Swan events** (COVID crash, Terra/LUNA, FTX, flash crashes, 18-month bear market): Drawdown bound holds **8/8**, LP floor holds **8/8**, excess return holds **7/8** (fails only when vol collapses below threshold — by design).

Crypto annualized volatility: ADA ~85%, BTC ~60%, ETH ~75%. All well above the 25.5% break-even threshold. The strategy's edge *increases* with volatility — the opposite of traditional finance.

## Tokenomics

### Distribution (100M Fixed Supply)

60% Community (ISPO)	30% LBP	5% Team	3% Treasury	2% Liquidity
<ul style="list-style-type: none"> <li>• <b>60%</b> Community staking (ISPO, 6 months)</li> <li>• <b>30%</b> Fair-launch auction (72h LBP)</li> <li>• <b>5%</b> Team (4-year vest, 1-year cliff)</li> <li>• <b>3%</b> Treasury (DAO grants)</li> <li>• <b>2%</b> Liquidity (locked 2 years)</li> </ul>				
<b>90% community-owned.</b> Team: 5% (industry avg: 20–30%).				

### Revenue Model

Fee	Rate
Management	2% annually on TVL
Performance	20% of outperformance vs HODL

Fee split: 70% to CHAOS stakers, 30% to treasury.

Year	TVL	Revenue	Staker APY
1	\$10M	\$230K	3.5%
2	\$50M	\$1.15M	16.1%
3	\$100M	\$2.3M	32.2%

**Break-even:** ~\$25M TVL (Year 2).

## Technical Architecture

### Cardano / EUTXO Security

Property	Cardano
Reentrancy	<b>Impossible</b> by design
Flash loans	<b>Impossible</b> (no flash loans)
Determinism	<b>Guaranteed</b> local validation
Language	Aiken (functional, auditable)

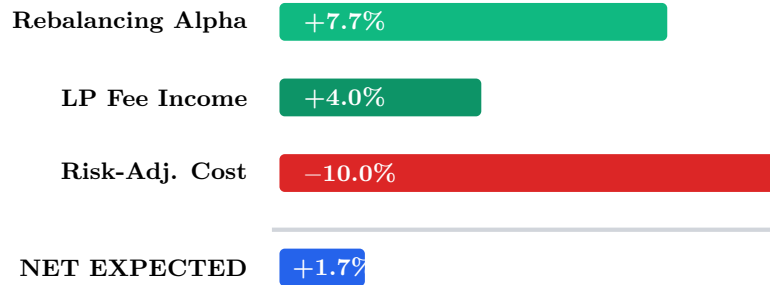
Cardano's EUTXO model eliminates entire exploit classes that have cost Ethereum DeFi billions.

### Oracle Design

- 4 independent sources (Charli3, Orcfax, Miniswap TWAP, CoinGecko)
- Consensus: 2+ sources within 5%
- Anomaly rejection: >20% moves blocked
- Attack cost: >\$500K vs <\$1K max gain

The oracle design makes manipulation economically irrational by a factor of 500:1.

## Risk Assessment



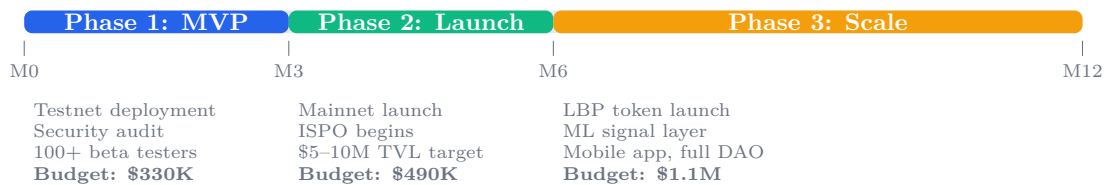
### Top Risks

1. **Regulatory action** (40% weight) — mitigated by off-shore entity, progressive decentralization
2. **Bull underperformance** (35%) — by design; disclosed upfront
3. **Smart contract bugs** (15%) — mitigated by multiple audits, formal verification, TVL caps
4. **Oracle failure** (10%) — mitigated by 4-source consensus, circuit breakers

### Risk Mitigations

- Circuit breakers: auto-pause on >20% oracle deviation
- TVL caps: phased rollout (\$1M → \$10M → uncapped)
- Insurance: 5% of treasury reserved for exploit coverage
- Governance: parameter changes require 7-day timelock
- Audits: 2 independent firms pre-launch

## Roadmap & Budget



**Total budget:** \$1.92M. **Minimum viable:** \$330K (Phase 1 only). All budgets denominated in stablecoins to eliminate runway risk.

## Investment Thesis

1. **Math works:** 12 formally verified theorems, stress-tested against 8 crisis scenarios, 5-asset validation
2. **Market timing:** Crypto volatility is structurally high — strategy edge *increases* with volatility
3. **Underserved market:** No formally verified antifragile fund exists in DeFi
4. **Cardano advantage:** EUTXO + low fees + 20% LP yield = 9.3% edge vs 0.2% on Bitcoin L1
5. **Conservative tokenomics:** 90% community-owned, 5% team, fixed supply
6. **Clear revenue model:** 2/20 fee structure, break-even at \$25M TVL

### Get In Touch

**Web:** chaos.fund

**Whitepaper:** chaos.fund/whitepaper

**GitHub:** github.com/Algiras/chaos

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