



Market Making in Polymarket

Where Opportunity Meets Every Tick.

Presented by **Team B**



Our Best Team



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What is Poly-Market?

Polymarket is a marketplace where prices represent the probability of real-world events, and traders exchange contracts in a central limit order book, creating continuous liquidity demand until event resolution.

Our Vision

To build a disciplined, scalable MM operation on event-driven markets that transforms uncertainty into a sustainable liquidity business.

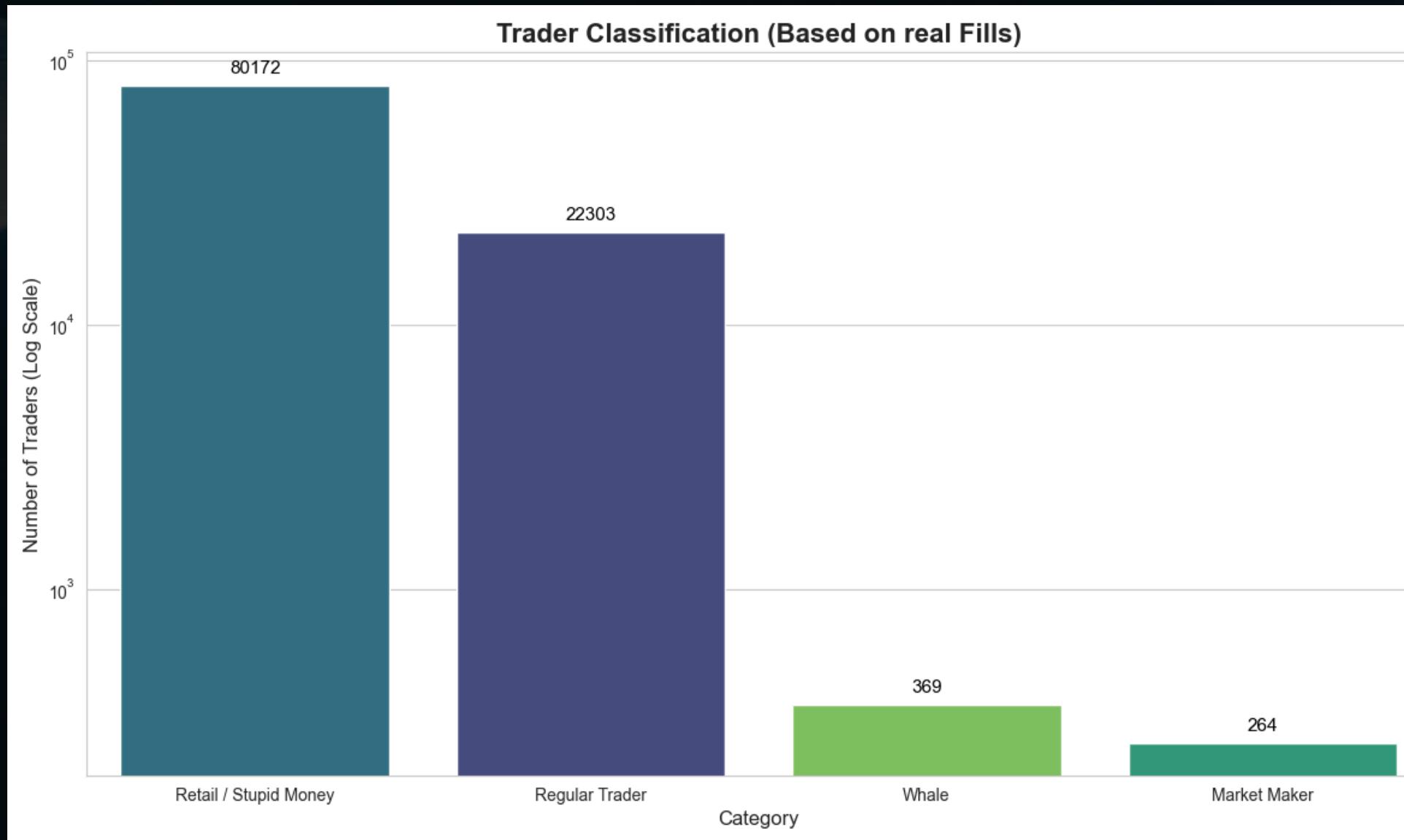
Our Mission

Deliver a repeatable market-making strategy that:

- Converts volume into revenue through rebates and controlled spread
- Actively avoids toxic flow using data-driven risk signals
- Enforces strict sizing, stop rules, and governance
- Produces clear GO / NO-GO decisions for scaling

This creates a perfect Vision → Mission → Strategy flow.

Scope of Analysis & Evidence Discipline



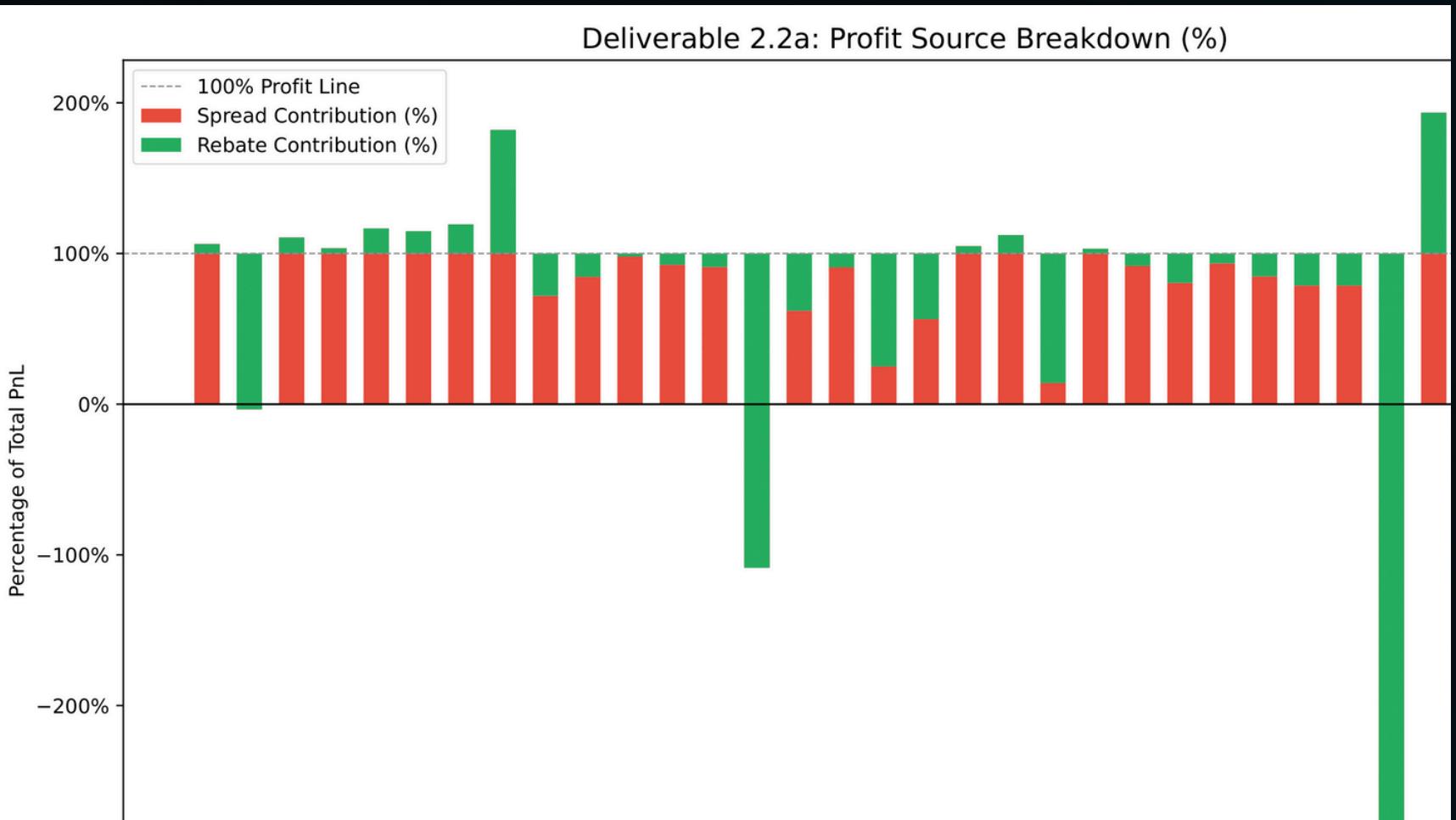
Empirical Inputs

- On-chain execution data: maker vs taker trades, timestamps, prices, and sizes
- Inventory evolution and realized PnL attribution
- Market microstructure signals: flow imbalance and pre-event accumulation patterns

Explicit hypotheses

- Identification of real-world actors or counterparties
- Claims of insider activity or intent beyond observable trading behavior

when does this model work — and when does it break?



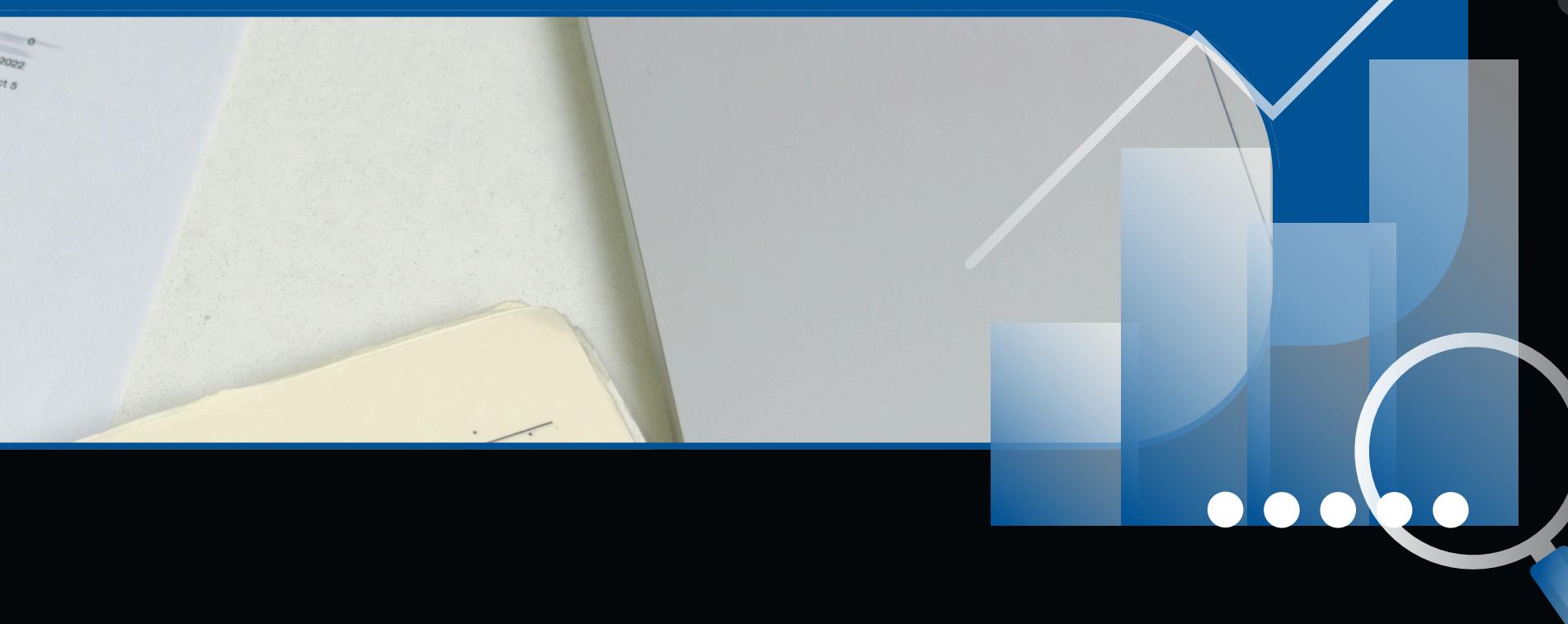
Unit Economics – How a Market Maker Makes Money

$$\mathbb{E}[\text{PnL}_{\text{day}}] \approx \frac{V}{10,000}(s + r - a - f) - K$$

$$V_{\min} \approx \frac{10,000 \times 150}{42} \approx 35,700 \text{ USDC/day}$$

- V – Daily turnover (closest thing to “chiffre d'affaires”)
- r – Maker rebate yield (e.g. 1.5% → 150 bps)
- a – Toxicity / adverse selection (dominant risk term)
- K – Fixed daily costs (infra, monitoring, engineering)

$$r = 150, s = 2, (a + f) = 110, K = 150 \Rightarrow (s + r - a - f) = 42 \text{ bps}$$



BEING SYSTEMATICALLY FILLED
RIGHT BEFORE PRICE MOVES.

WHEN DOES THIS MODEL BREAK? TOXICITY

NEGATIVE SELECTION, WIDENING
LOSSES, AND RISK SPIKES NEAR
NEWS AND SETTLEMENT.

Volume-synchronized Probability of Informed Trading.

$$\text{VPIN} = \frac{|V^B - V^S|}{V^B + V^S} \in [0, 1]$$

Low VPIN

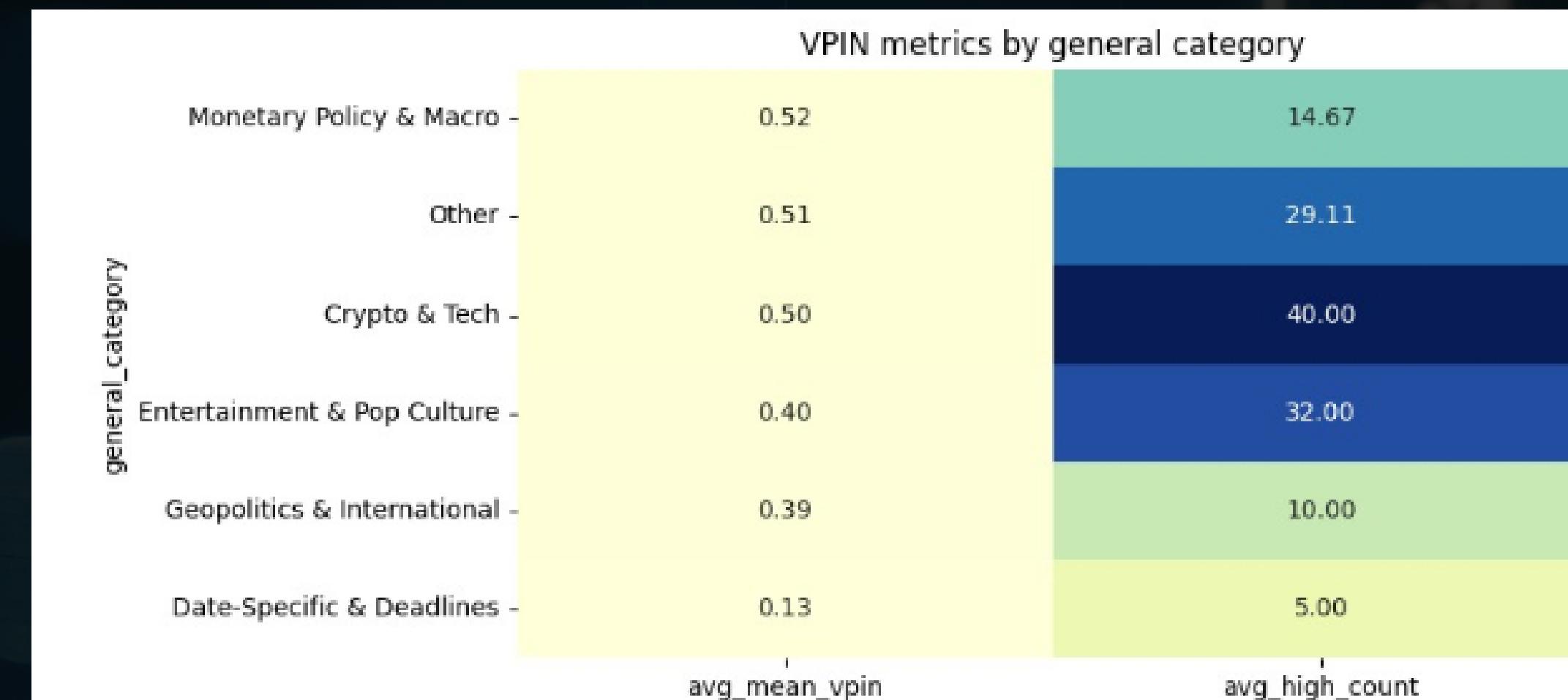
Balanced order flow
Safe to quote normally

**Rising
VPIN**

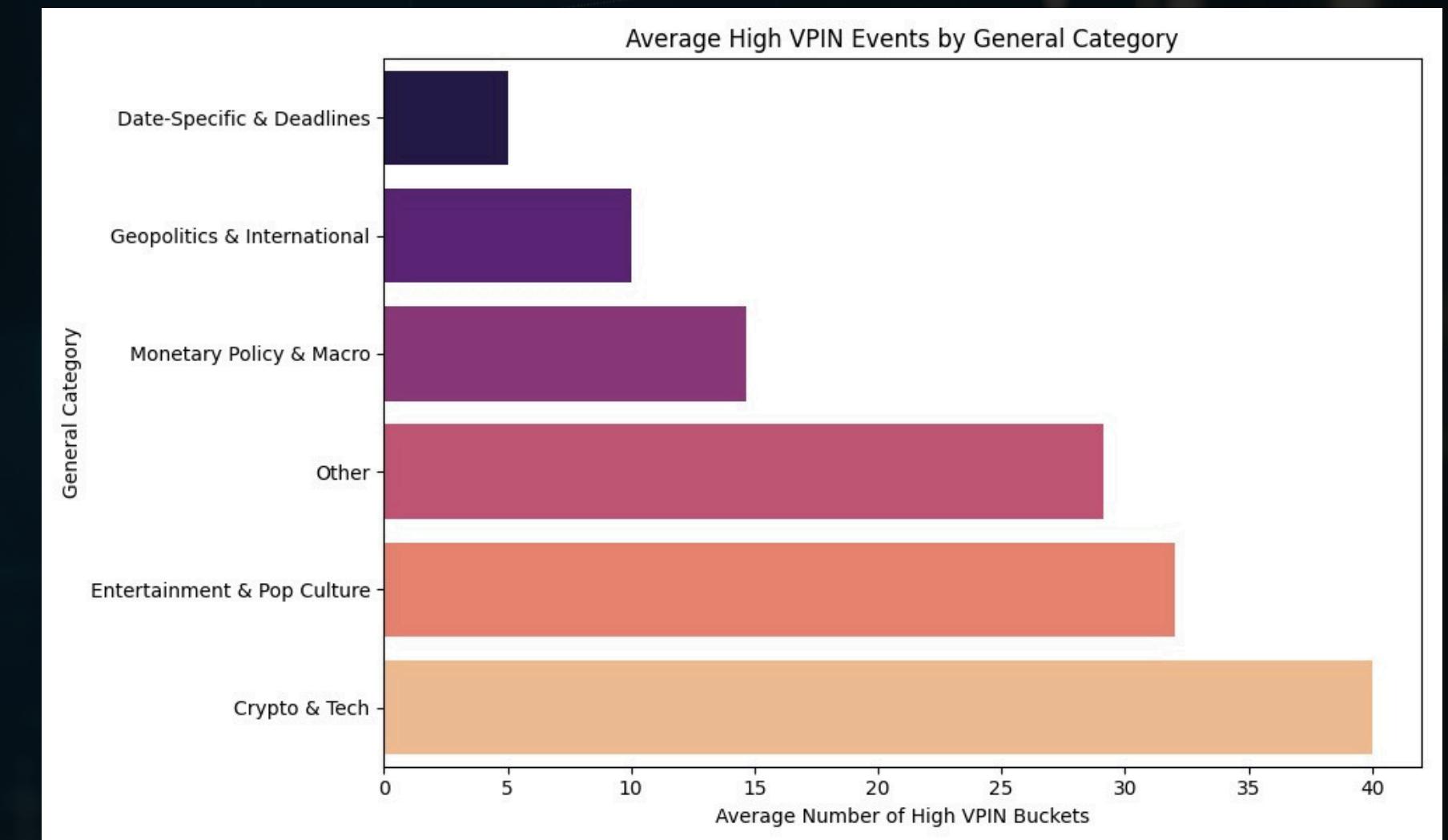
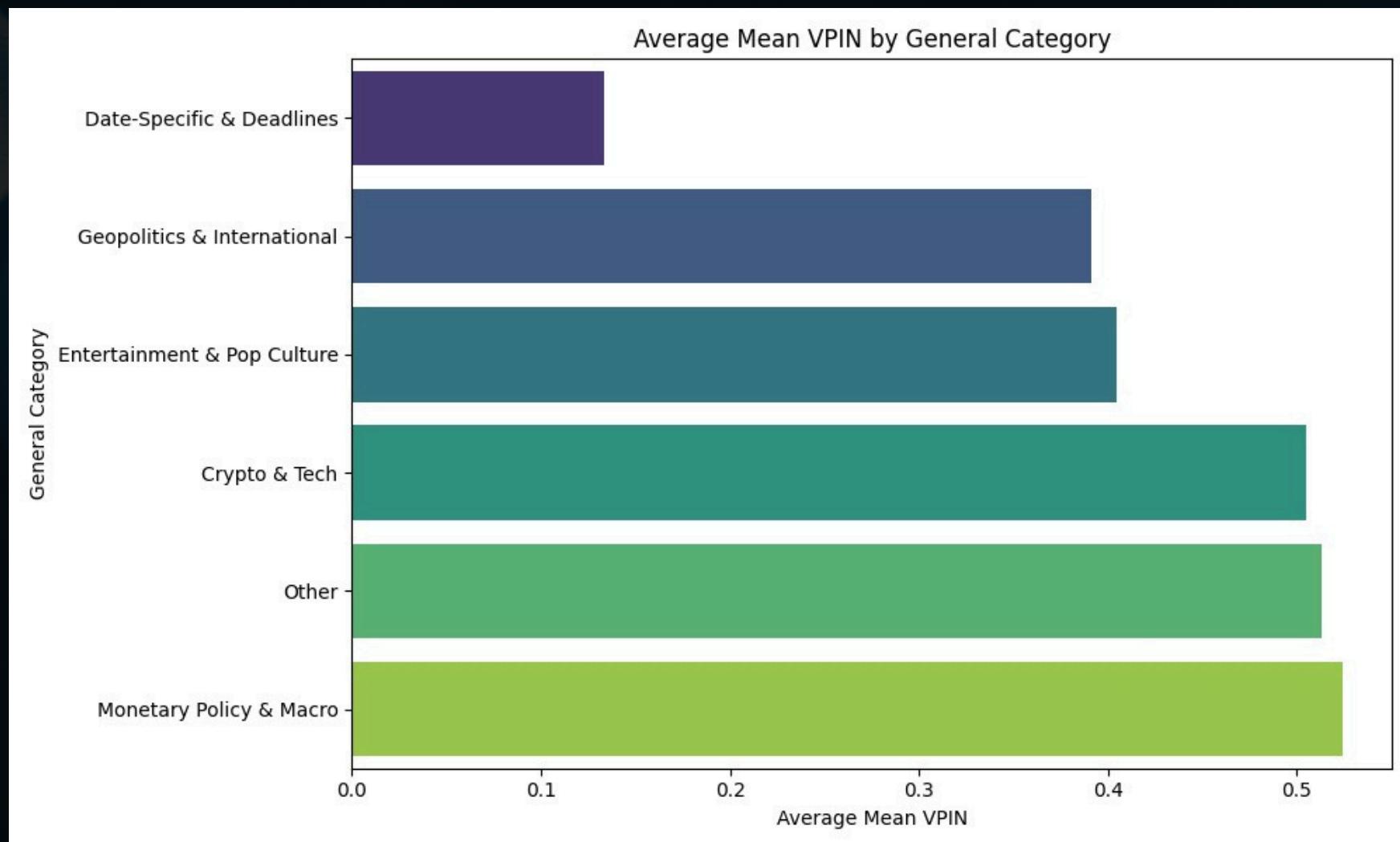
Increasingly one-sided /
informed flow
Reduce size, widen spreads

**VPIN spikes
persistence**

High adverse-selection risk
Pull liquidity (kill-switch)



$$\text{VPIN} = \frac{|V^B - V^S|}{V^B + V^S} \in [0, 1]$$



Mean VPIN by category

High-VPIN activity (preliminary)

Volume-synchronized Probability of Informed Trading.

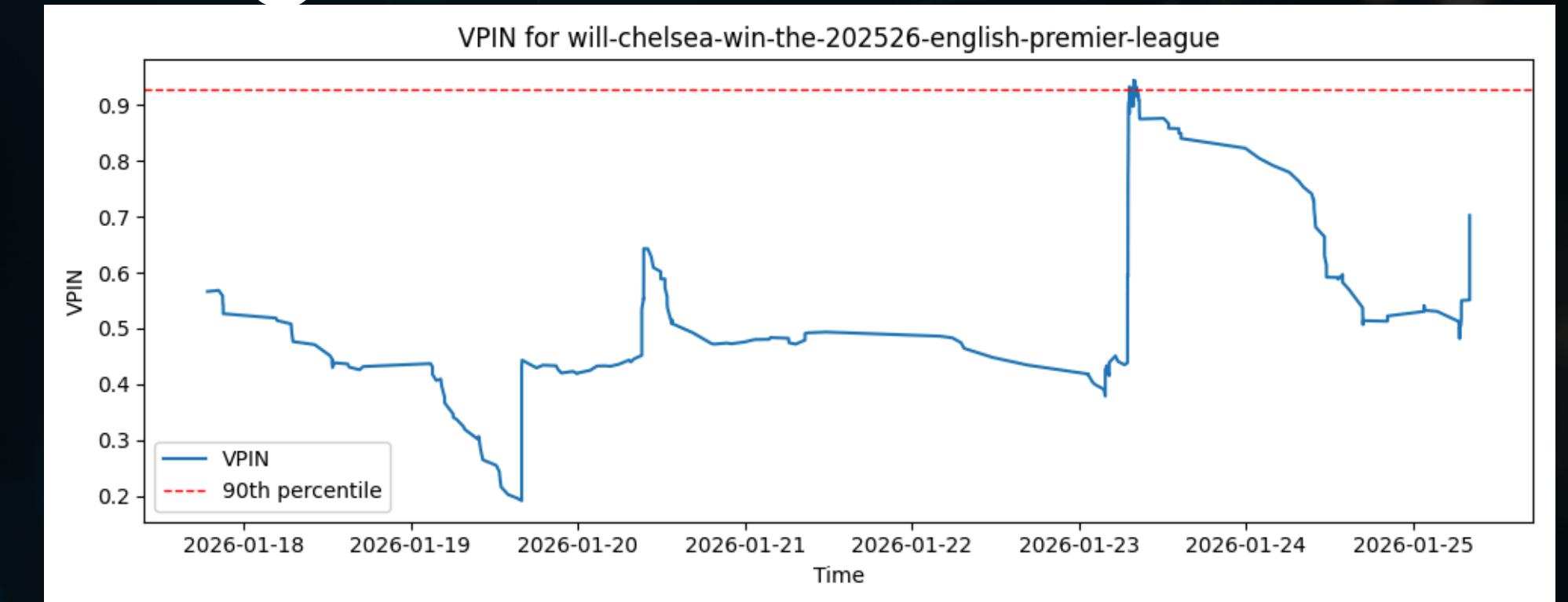
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1. Higher-Toxicity Categories

- Categories: Monetary Policy & Macro, Other, and Crypto & Tech
- Mean VPIN: $\approx 0.50\text{--}0.52$
- Recommendation: Quote with conservative size and implement strict VPIN throttles/kill-switches.

2. Episodic-Spike Behavior

- Category: Entertainment & Pop Culture
- Mean VPIN: ≈ 0.40
- Characteristics: High spike activity, consistent with news-driven bursts
- Operational Strategy: Use fast throttles and time-to-resolution exits to manage effectively.

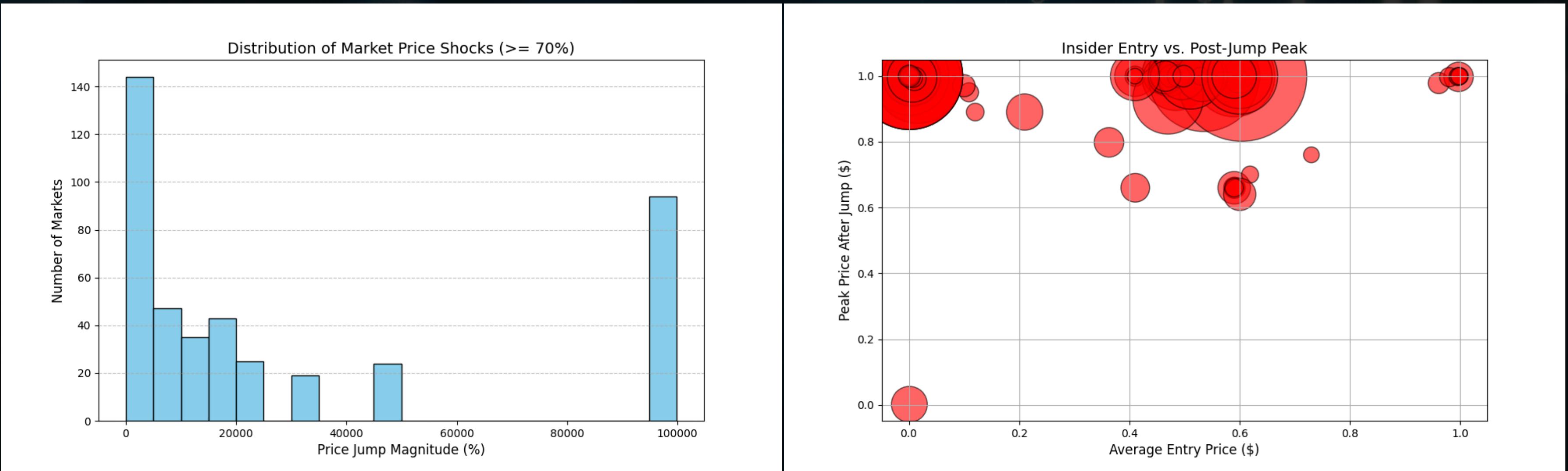


3. Lower-Risk Segment:

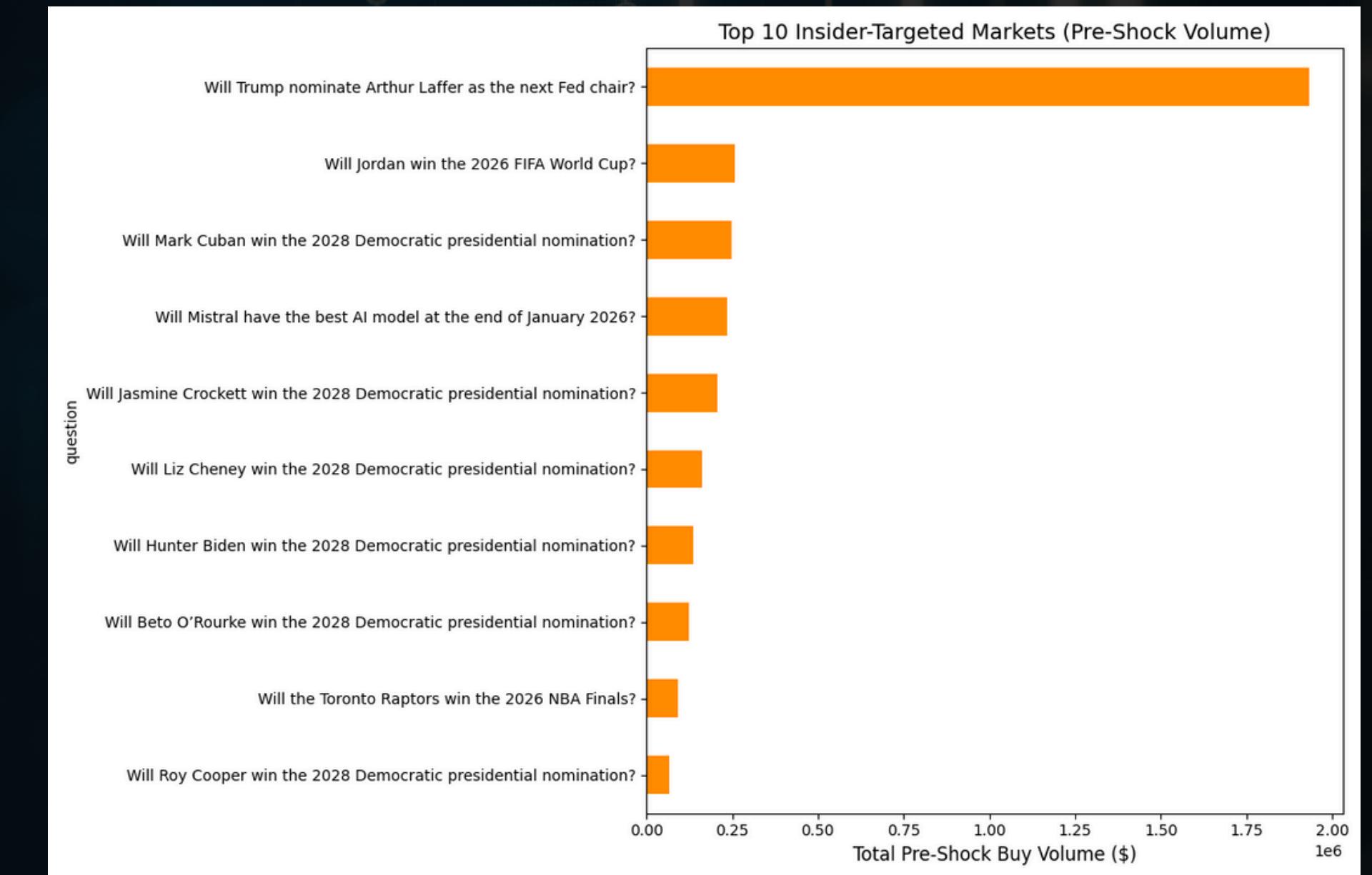
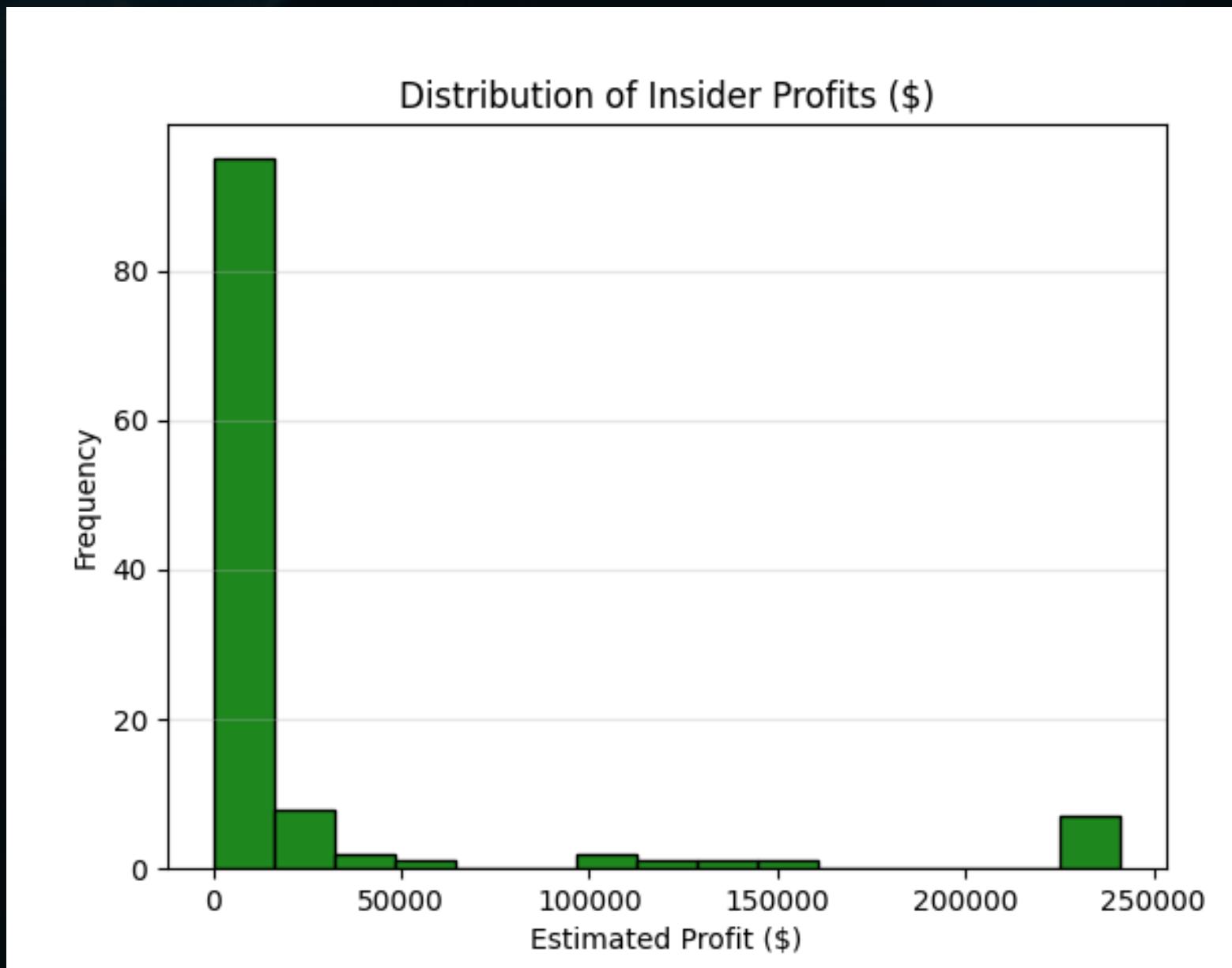
- Date-Specific & Deadlines is the cleanest segment, with the lowest mean
- VPIN (≈ 0.13) and fewest high-event episodes in the current aggregation.

Insider-like trading

We detect and identify markets where inside trading likely occurred and quantify its volume



Insider-like trading



Toxicity Avoidance

We operationalize everything into 3 decisions per contract:

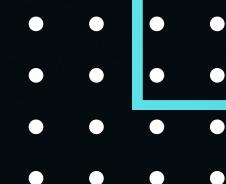
01 Enter?

Inputs used:

- 24h volume and active participation
- Time to resolution
- Historical toxicity indicators (mean VPIN, spike frequency)

Objective:

- Avoid structurally toxic markets before quoting starts.



02 How to quote?

When flow is balanced:

- Tight spreads
- Larger sizes
- Passive maker-only execution

When informed flow increases:

- Wider spreads
- Reduced size
- Inventory skewing

03 When to stop?

Stop conditions include:

- VPIN spikes with persistence
- Sudden volatility or news shocks
- Approaching resolution windows

Action:

Immediate quote cancellation and inventory flattening.

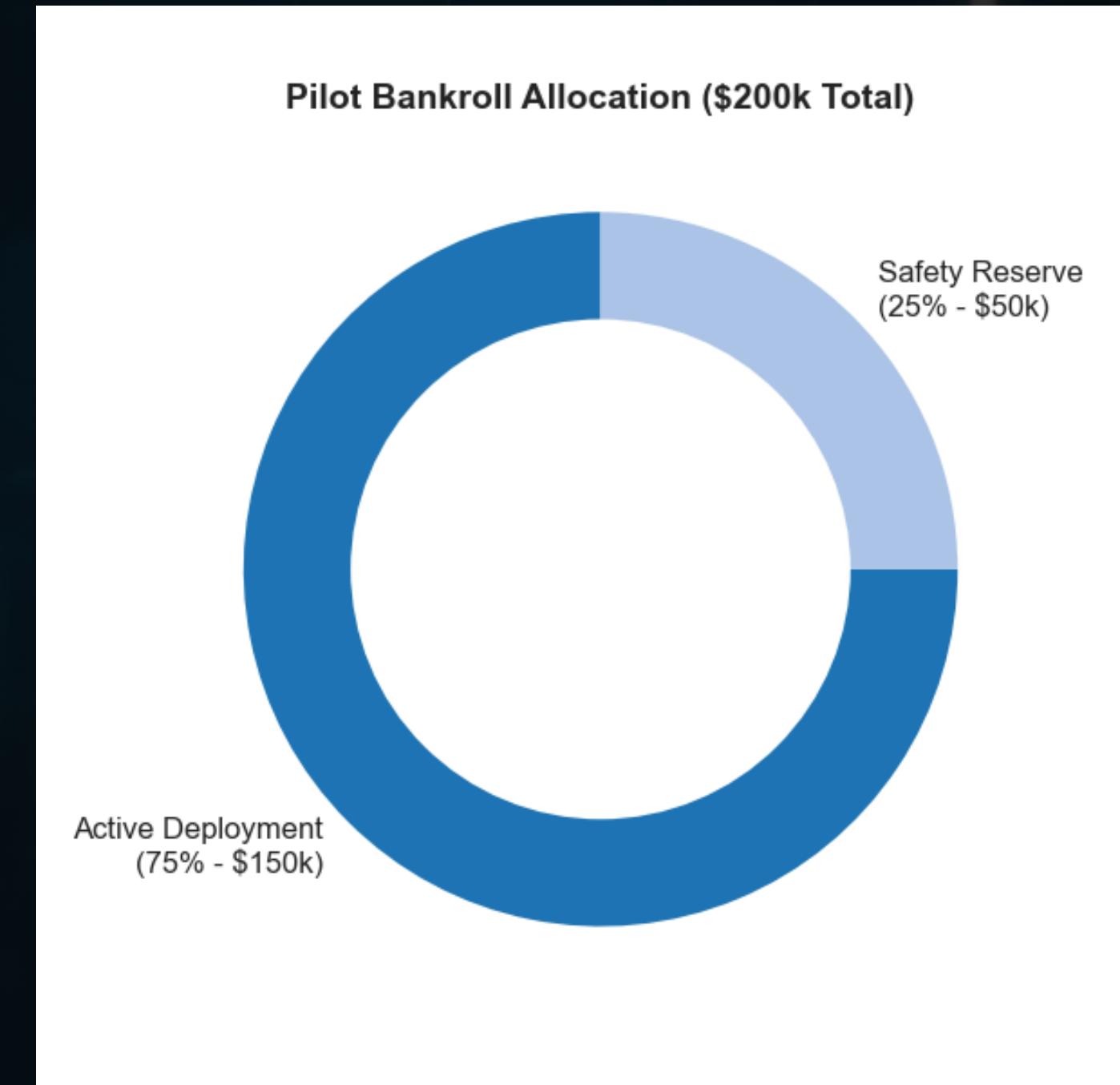
Traffic-Light Engine

State	Conditions	Action
GREEN	$V_{24h} \geq 100k$, $\overline{VPIN} \leq \alpha$, $\text{spike_rate} \leq \beta$	Passive maker-only, tight spread, maximize maker fills
AMBER	VPIN rising / volatility rising / persistence k	Widen spread, reduce size, skew inventory, alerts
RED	VPIN spikes / breaking news / near resolution	Kill-switch: cancel orders, stop quoting, flatten inventory



Risk Sizing & Capital Allocation

-  **Pilot Bankroll:** C = 200,000 USDC
 -  **Hard Cap:** Max 5% per market (\$10,000) to prevent concentration risk
 -  **Diversification:** Quote 10–25 uncorrelated markets simultaneously
 -  **Safety Reserve:** Keep 50,000 USDC in reserve for inventory swings and re-entry



Projected Daily PnL (Scenarios)

01 Green Card - "Pilot Good"

Condition: Low Toxicity $V = 400k$

$$E[PnL] = 40 \times 42 - 150 = 1,530 \text{ USDC/day}$$

02 Red Card - "Toxic"

Condition: High Toxicity $V = 1.0M$

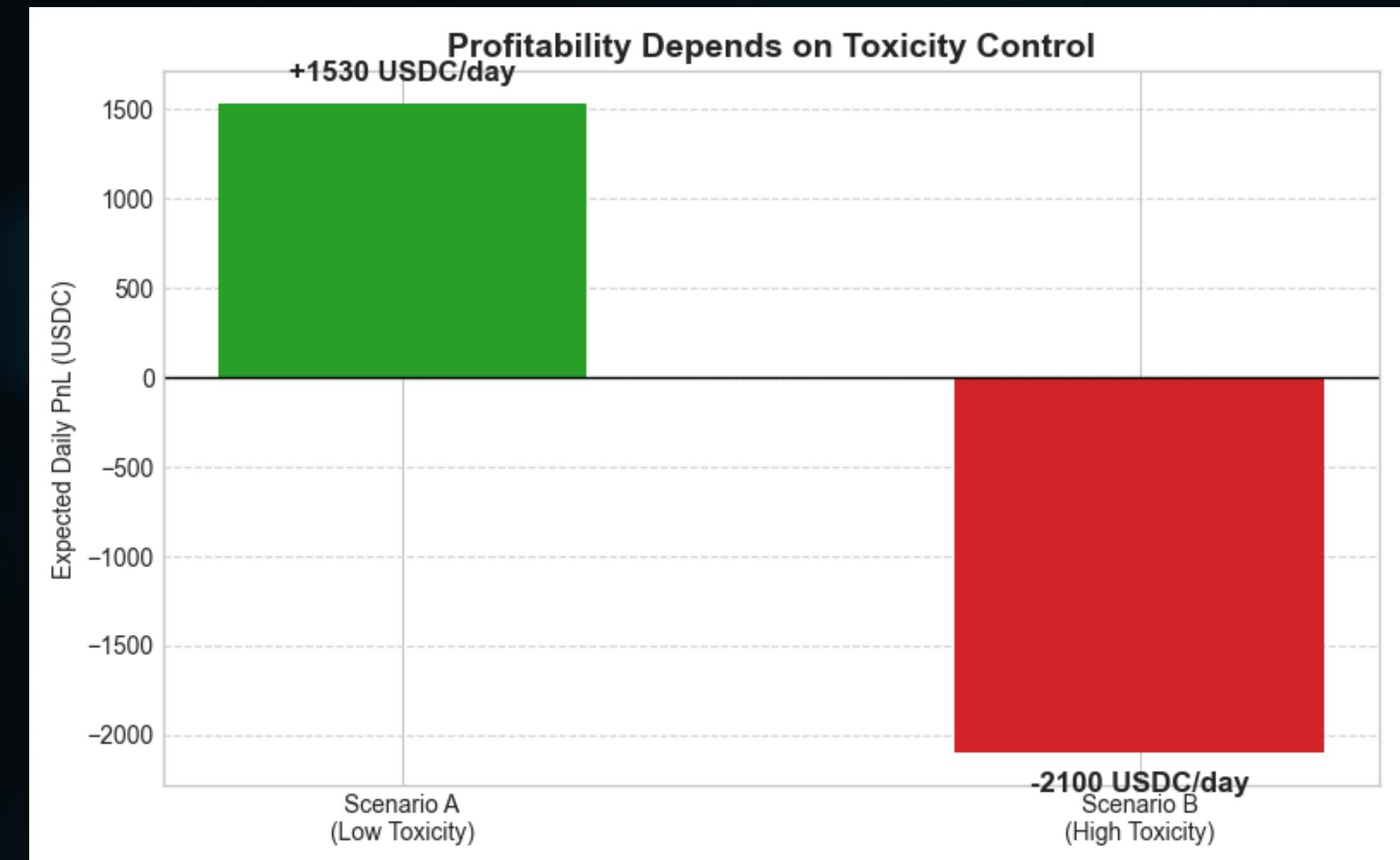
$$E[PnL] = 100 \times (-18) - 300 = -2,100 \text{ USDC/day}$$



Volume only scales profit if toxicity is controlled. In toxic regimes, we lose money faster

⋮ ⋮ ⋮
⋮ ⋮ ⋮
⋮ ⋮ ⋮

Projected Daily PnL (Scenarios)



The "Chiffre d'Affaires" (Turnover)



Operational Scale :

In market making, 'Revenue' is a function of Volume Processed.

Target Daily Volume: **\$400,000**

Monthly Turnover Base: ~**\$12,000,000**

Scenario	Turnover V	Regime	Expected PnL/day
Pilot-OK	200k	low-toxicity	+490
Pilot-Good	400k	low-toxicity	+1,530
Prod-OK	1.0M	low-toxicity	+3,400
Prod-Toxic	1.0M	toxic	-2,100

The Stress Test (GO / NO-GO)



Success Criteria: GO with constraints

We only scale if the pilot passes these 4 hard constraints:

01 Stable Rebates (Access confirmed).

02 Sustainable Volume ($V \geq V_{min}$)

03 Drawdown Control (VPIN throttles work)

04 Ops Reliability (Cancellations work)

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⋮
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Business Roadmap

Token issue

Finalize VPIN
thresholds & Spike
detection

Week

#1

Deployment

Live Traffic-Light
Engine on 10-15
Markets

Week

#2

Decision

Validate Kill-Switches
& Measure Realized
PL

End. of  plot

