Results: Market Mood Index Visualization

The chart shows the **Market Mood Index (0–100)** for `ASSET_000` across time.

What the Index Represents

The Market Mood Index converts model probabilities into a smooth, interpretable health score:

- **100 → Strong / Stable Market Conditions**
- **65–100 → Normal Regime**
- **40–65 → Warning Regime**
- **0–40 → Critical Regime**

The score is derived from:

1. Model-predicted regime probabilities
2. Stress probability (`p_warning + p_critical`)
3. Entropy-based confidence adjustment
4. EWMA smoothing
5. Hysteresis-based regime transitions

Observed Behavior

From the visualization:

- The index remains near **100** during stable periods.
- Sharp drops toward **0–40** correspond to model-detected stress events.

- Transitions are not noisy due to:
    - EWMA smoothing
    - Persistence thresholds
    - Hysteresis logic

This prevents rapid regime “flapping” during short-lived volatility spikes.

⚙️ Regime Logic Summary

Regime	Entry Condition	Exit Condition
Normal	Mood ≥ 72	—
Warning	Mood ≤ 65 for N days	Mood ≥ 72 for M days
Critical	Mood ≤ 40 for N days	Mood ≥ 48 for M days

Additionally:

- Immediate escalation occurs if `p_critical` is high with strong confidence.

🎯 Key Design Features

- Probabilistic regime classification
- Confidence-weighted scoring
- Hysteresis-based state transitions
- Business-rule overrides
- Multi-asset scalable architecture

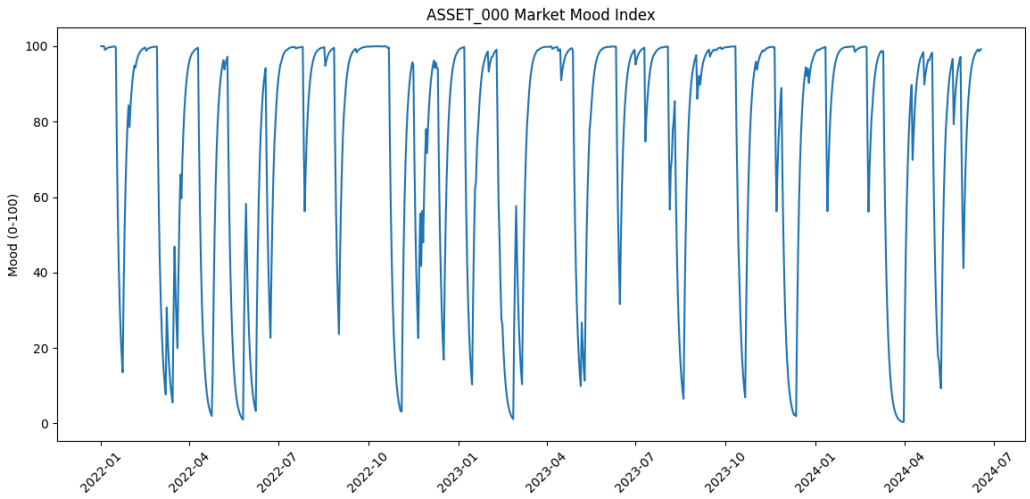
📌 Interpretation

The system behaves like a **risk thermometer**:

- Sustained high values → Stable market regime
- Moderate drops → Early warning signals
- Deep collapses → High-risk / stress periods

This framework can be extended to:

- Portfolio-level aggregation
- Risk-adjusted allocation shifts
- Regime-based backtesting
- Real-time monitoring dashboards



The visualization shows the Market Mood Index (0–100) for `ASSET_000` over time, where higher values indicate stable conditions and sharp declines reflect periods of elevated stress. The index remains close to 100 during normal market regimes and drops significantly during warning or critical phases, demonstrating the model's ability to detect stress events. Thanks to confidence adjustment, smoothing, and hysteresis-based transitions, the signal avoids excessive noise and regime flapping, resulting in clear, interpretable shifts between Normal, Warning, and Critical states.