User Guide

Systemic Risk Projection Model v4.0

10-Year Monte Carlo State-Transition Framework

What This Is

This model is a structured scenario framework, not a predictive product. It runs 5,000 Monte Carlo simulations across 12 disruption vectors, tracking how the world might transition between five states over the next decade. It does not tell you what will happen. It makes the consequences of your beliefs about what might happen visible and testable.

The model was built to shift the burden of proof. Instead of arguing that systemic risk is rising, it asks: show me the version of the next decade where conventional portfolio allocation is coherent. If you cannot construct that version from settings you believe in, the case for a different approach makes itself.

The Five World-States

Every simulation tracks which of five states the world occupies each year. These are not predictions. They are regimes, each with distinct implications for institutional function and asset performance.

State	Description	Institutional Function
Stable Adaptation	Systems absorbing shocks, adapting	Full capacity. Contracts enforced, markets clear.
Managed Disruption	Visible stress, institutions straining	Functional but degrading. Response times lengthen.
Severe Disruption	Multiple systems under simultaneous stress	Partial failure. Some markets close, some claims unenforceable.
Systemic Crisis	Institutional capacity overwhelmed	Widespread failure. Diversification reveals correlated exposure.
Civilisational Stress	Foundational systems in question	Fundamental renegotiation of social and economic contracts.

The model begins at Managed Disruption by default, reflecting 2026 conditions: insurance markets already retreating, AI labour displacement measurable, democratic institutions under stress in multiple major economies. Users who disagree can adjust.

How the Model Works

Disruption Vectors

Twelve disruption vectors represent distinct categories of systemic risk. Each has a base probability (calibrated to observable 2026 data), a peak window (the years during which the event is most likely to fire), a magnitude (how much downward pressure it applies when active), and a persistence duration (how long the effects last). Two vectors are bidirectional: Energy Transition and Institutional Formation can stabilise or destabilise depending on direction.

Event Correlation

Events are not independent. When correlated events co-occur, their combined pressure is amplified by a pairwise multiplier. For example, insurance market failure and sovereign debt crisis carry a 1.4x multiplier, reflecting that insurance retreat socialises risk onto fiscal balance sheets. Climate tipping and food system shock carry 1.5x. The full correlation matrix is visible on the Calibration tab.

Nonlinear Compounding

Three simultaneous disruptions produce more total pressure than the sum of three individual shocks. The compounding function ensures that multiple concurrent events create emergent stress beyond what any single event produces alone. This is the mathematical expression of cascading failure.

EROI Background Constraint

Net energy return on energy invested (EROI) declines over the decade, applying gentle downward pressure on all state transitions. This reflects the biophysical reality that declining surplus energy constrains institutional capacity to respond to crises. The EROI slider controls the severity of this background squeeze. At high settings, even without acute shocks, the system drifts toward worse states.

Recovery Degradation

Time spent in stressed states (Severe Disruption or worse) progressively reduces recovery probability, creating a persistence trap. Year 1 in crisis has better recovery odds than Year 5. This prevents the model from implying that stressed systems bounce back with the same vigour regardless of how long stress has persisted.

Substrate Health Index

An aggregate measure of institutional, ecological, and governance capacity. It starts at 100 and is damaged by active disruption events and EROI decline, partially restored by stabilising vectors. When it falls below 50, the institutional cascade becomes the central risk rather than a tail risk. The index is visible on the Substrate Health tab.

Navigating the Interface

Calibration

Your starting point. Set disruption probabilities via sliders or click a preset to explore a narrative. The preset grid offers eight scenario stories, each designed to teach something different rather than just adjusting severity. The correlation matrix shows which event pairs amplify each other. Quick Results shows the headline probability and substrate health for your current settings.

Terminal Distribution

Where do 5,000 simulated futures end up at Year 10? The stacked area chart shows how the distribution of world-states evolves over time. Sample paths show 150 individual simulation trajectories so you can see the range of possibilities, not just the average.

Substrate Health

Tracks cumulative damage to the institutional, ecological, and governance substrate beneath the financial system. The critical threshold at 50 marks where cascade risk becomes central. When substrates degrade, financial claims that depend on them become fragile, regardless of what diversification strategy you employ.

Institutional Cascade

Shows the amplification from physical risk alone (22% loss) through sequential institutional failure to full cascade (86% loss). The gap between 22% and 86% is not additional physical risk. It is the cost of institutional entanglement. Only substrate stabilisation addresses the source.

Portfolio Outcomes

Three strategies tracked across all simulations. Conventional (stocks/bonds), Resilient Real Assets (hard assets, commodities), and Formation Capital (investment in the institutional infrastructure the model shows is needed). Returns are state-dependent. Formation Capital is the only strategy that generates positive returns through Systemic Crisis, because resilient infrastructure becomes more valuable under stress.

The Question

The rhetorical core. At what settings do the sliders need to be before you stop worrying? If you cannot find settings you believe in that bring the probability of Severe Disruption or worse below 20%, formation capital is the rational response.

Methodology

Full transparency. Every vector is sourced and cited. Key design decisions are documented. Limitations are stated plainly. The model is designed to be interrogated, not accepted on authority.

The Eight Presets

Each preset tells a different story about the next decade. They are designed to be explored in sequence. Click through them to see how different assumptions about the world produce different distributions of outcomes.

Optimist. Strong institutions, rapid adaptation, successful energy transition. Requires belief that current trends reverse.

Adaptation Succeeds. Energy transition and institutional formation at strong levels. Everything else moderate. Shows that even with strong positive vectors, structural threats still produce meaningful risk.

Current Trajectory. Observable trends projected forward. No assumption of improvement or deterioration. The 2026 starting point.

Just Two Things. Only insurance failure and sovereign debt at high levels. Everything else low. Shows how correlation and cascade amplify even limited disruption.

The Simplification. Declining EROI, material constraints binding, energy transition struggling. The biophysical squeeze without acute crises.

The Tindale Trap. Current monetary framework producing long-run misallocation. Sovereign debt and democratic stress high, no catastrophic events. The slow structural contradiction.

The Convergence. Multiple front-loaded threats firing simultaneously. The window of acute vulnerability.

Pessimist. Multiple systems already failing. Represents the view that 2026 conditions are worse than commonly acknowledged.

After exploring the presets, adjust any slider to create your own scenario. The model responds immediately. Click "Run 5,000 Simulations" or "Re-roll" to generate fresh results with different random seeds. Differences of 2-3 percentage points between runs are normal sampling noise.

How to Use This Model

The Two-Minute Experience

Click through the presets. Watch the Terminal Distribution and Portfolio Outcomes tabs update. Navigate to The Question tab. Note the probability at your settings. If it is above 20%, the companion documents (Worldview and Wealth Stewardship, the Perpetual Civilisational Treasury Protocol) describe what to do about it.

The Thirty-Minute Deep Dive

Start with Current Trajectory. Read the Methodology tab to understand each vector. Adjust individual sliders to reflect your own assessment. Pay attention to which vectors you find yourself setting lower than the base calibration, and ask whether that position requires active disbelief in current data. Explore the Substrate Health and Institutional Cascade tabs to understand the mechanisms beneath the headline numbers.

For Investment Committees

Run the model at Current Trajectory defaults. Note the P(Severe+) figure. Then ask each committee member to adjust the sliders to reflect their personal assessment. Compare the resulting distributions. The model makes implicit disagreements about the future explicit and testable. The question is not whether anyone is right. The question is whether anyone can construct a plausible scenario that does not require hedging.

Important Caveats

This model is a thinking tool, not a forecasting product. The base probabilities are calibrated to observable data and institutional research, but they are starting points for exploration, not claims of certainty. The 5,000-simulation Monte Carlo framework produces structured scenario analysis, not predictions. Portfolio returns are simplified archetypes. Real performance depends on geographic concentration, sector exposure, leverage, and liquidity. The model treats the world as one system and does not capture geographic variation. Limitations are documented in full on the Methodology tab.

The model is designed to be interrogated. Disagree with a base probability? Move the slider. Think the correlation structure is wrong? The matrix is transparent. The only position the model does not accommodate is the position that systemic risk does not need to be assessed.