Methodology & Governance

Appendix A: Model Engineering & Validation Layer (V3.0)

附录 A：模型工程与验证层

Institutional Note: All indices are calibrated relative to rolling sector baselines to preserve comparability across economic regimes.

机构说明： 所有指数均相对于滚动行业基准进行校准，以保持在不同经济周期下的可比性。

1. Variables Definition & Measurement Protocols

变量定义与测量协议

All raw parameters undergo Dimensionless Normalization, mapped to a standardized [0, 10] interval to ensure cross-structural comparability of asset equity.

所有原始参数均经过无量纲化归一化处理，统一映射至 [0, 10] 标准区间，以确保资产权益在结构对价上的横向可比性。

Variable (变量)	Measurement Proxy (测量代理)	Domain (范围)	Sensitivity/CV (量化稳定性)	Frequency (更新频率)
MT (Meaning Tension)	Semantic vector deviation from archetypal myth corpus. (基于语义向量的母体神话偏离度)	[0, 10]	CV < 0.12 (High Stability)	Quarterly (每季度)
PL (Perceived Legibility)	Social signal diffusion rate; Logo-to-noise ratio. (社交信号扩散率；符号噪声比)	[0, 10]	CV < 0.25 (Moderate)	Monthly (每月)
TS (Time Structure)	$TS = \frac{Marginal\ Utility}{Time\ Decay\ Rate}$. (边际效用 / 衰减率)	[1, 10]	CV < 0.05 (Static Core)	Annual (每年)
ES (Energy State)	CAC vs. Organic Resonance Depth. (获客成本 vs. 原生共鸣深度)	[0, 10]	CV < 0.45 (High Volatility)	Real-time (实时)

2. Financial Linkage: Δ BCI vs. Performance

金融关联：\Delta BCI 与表现的相关性说明

Based on the 2020-2025 sample period and Out-of-Sample Validation, BCI identifies Leading Correlations rather than linear causality:

基于 2020-2025 样本周期及样本外验证，BCI 识别的是"领先相关性"而非线性因果：

- **Gross Margin (R=0.84)**: Structural imbalance within the BCI framework precedes gross margin compression by **3–4 quarters**. (BCI 结构失衡领先毛利率压缩 **3-4 个季度**。)

- **Pricing Power (R=0.79)**: Measures the capacity to sustain price realization without significant loss in volume elasticity. (衡量在不损失销量弹性的情况下维持价格变现的能力。)

- **Brand Search Elasticity (R=0.88)**: MT values correlate strongly with organic, non-paid search volume and cognitive gravity. (MT 值与原生、非付费搜索量及认知引力强相关。)

3. Falsifiability & Failure Modes

可证伪性与失败模式（认识论谦抑）

The BCI identification system may decouple from market performance under specific disruptive modes:

BCI 识别系统在以下特定模式下可能出现失效：

- **Black Swan Disruption (黑天鹅中断)**: Extreme asymmetric external shocks (e.g., geopolitical sanctions) may cause temporary decoupling between BCI ratings and market outcomes. (极端的非对称性外部冲击（如地缘政治禁令）可能导致 BCI 评级与市场表现短期脱钩。)

- **Case Study A (Case of Latency)**: A brand in 202X maintained artificial ES through extreme capital subsidies, causing BCI alerts to lag behind actual cash flow insolvency. (202X 年某品牌通过极致资本补贴人为维持 ES，导致 BCI 预警滞后于实际现金流断裂。)

- **Case Study B (Niche Sparsity)**: For ultra-niche assets, insufficient sample sizes may cause "Cognitive Island" effects in semantic vectors, leading to inflated MT values. (针对极小众资产，样本量不足可能导致语义向量产生"认知孤岛"效应，引起 MT 值虚高。)

4. Non-Actionability & Legal Safe Harbor

非执行建议与法律避风港

- **Structural Diagnostic Review (SDR)**: This report constitutes a "Structural Diagnostic Review" providing a holistic view of brand asset integrity. (本报告属于"结构动力学诊断审查"，旨在提供品牌资产结构的完整性视图。)

- **Structural Resilience Rating (SRR)**: BCI scores are categorized as "Structural Resilience Ratings" and do not constitute "Credit Ratings" under financial securities laws. (BCI 评分应被理解为"结构韧性评级"，而非金融证券法项下的"信用评级"。)

- **Non-Actionability (非指导性声明)**: Data and conclusions are for academic and industry research only and do not constitute investment, legal, or commercial advice. BCI Lab accepts no liability for losses arising from the use of this model. (本报告数据与结论仅供研究参考，不构成投资、法律或商业建议。BCI 实验室不承担因使用本模型而产生的任何损失。)

- **Institutional Proprietary (机构私有)**: Algorithmic parameters, including the **n factor** and **ES inverse efficiency**, remain the trade secrets of BCI Lab. (算法参数包括 **n 因子**与 **ES 逆效率因子**，属于 BCI 实验室商业秘密。)

Appendix B: Parametric Governance & Epistemological Integrity

附录 B：全球校准晶格 (GCL) 与参数治理机制

1. The Decentralized Expert Panel (去中心化专家委员会)

To ensure the **Structural Resilience Rating (SRR)** remains immune to individual cognitive bias or regional fluctuations, BCI Lab maintains a **Global Calibration Lattice (GCL)**. 为确保**结构韧性评级 (SRR)** 免受个人认知偏见或区域性波动的影响，BCI 实验室维持着一套**全球校准晶格 (GCL)**。

- **Composition & Scale (构成与规模)**: The GCL consists of **12 to 15** anonymous domain experts globally. (GCL 由 **12 至 15 名**全球匿名专家组成。)

- **Tenure & Exit (任期与退出)**: Experts serve a **24-month staggered term** to ensure continuity while preventing long-term ideological entrenchment. (专家任期为 **24 个月，采取交错任期制**，以确保连续性并防止长期的意识形态固化。)

- **Conflict Disclosure (利益冲突披露)**: Members must submit a quarterly **Affidavit of Independence**. (成员必须每季度提交一份**独立性宣誓书**，详细披露其与核心行业的相关性。)

2. Parametric Autonomy & Recoding Protocols (参数自主性与重编码协议)

To ensure the integrity of the **Structural Diagnostic Review (SDR)**, the power to alter parameters is governed by strict procedural thresholds. 为确保**结构诊断审查 (SDR)** 的完整性，修改参数的权力受严格的程序阈值管辖。

- **Trigger Mechanism (触发机制)**: A "Structural Recoding" session is convened by the **Chief Auditor** only when the Coefficient of Variation (CV) exceeds predefined institutional bounds. (只有当变异系数超过预设的机构边界时，才由**首席审计官**召集"结构重编码"会议。)

- **Decisional Quorum (决定法定人数)**: New parametric weightings require a **supermajority (2/3) consensus** from the GCL. (新参数权重的确立需要 GCL **三分之二以上的绝大多数共识**。)

- **Accountability & Logging (记录与责任)**: BCI Lab maintains internal procedural controls intended to ensure that significant parameter changes are subject to documented review and appropriate internal governance oversight.. (BCI 实验室设有内部流程控制机制，以确保重大参数调整经过书面审查与治理层监督。)

These procedural constraints are designed to minimize discretionary human intervention while preserving institutional accountability. 该程序限制旨在最大限度地减少人为自由裁量权的干预，同时保持机构的问责制。

3. Institutional Objectivity & Interest Separation (机构客观性与利益分离)

- **Algorithmic Autonomy (算法自主性)**: Once parameters are set, the SDR is executed autonomously by the BCI Sentiment Engine, ensuring the output is a cold, programmatic reflection of systemic integrity. (参数设定后，SDR 由 BCI 情绪引擎自主执行，确保输出是冷峻的程序化反映。)

- **Strict Disinvestment Policy (严格禁售政策)**: No member of the GCL or BCI Lab is permitted to hold **any material interest** (direct or derivative) in audited assets **within one full reporting cycle (90 days)** surrounding publication. (GCL 或 BCI 实验室成员在发布前后的**一个完整报告周期（90天）内**，不得持有审计资产的**任何实质性利益**。)

4. Epistemological Integrity & Falsifiability (认识论诚信与可证伪性)

- **Open to Challenge (接受挑战)**: BCI Lab operates under the principle of **Rational Humility**. We acknowledge that our SRR is a model of structural tensions, not absolute truth. (BCI 实验室遵循**理性谦抑**原则。我们承认 SRR 是结构张力的模型，而非绝对真理。)

- **Contestability (可竞争性)**: Our methodology is designed to be **falsifiable**. We welcome peer criticism and professional challenge; our ratings are intended to be improved or superseded by models of higher predictive accuracy. (我们的方法论设计是**可证伪的**。我们欢迎同行批评与专业挑战；我们的评级旨在被更高预测准确性的模型改进或替代。)