



Socrate II Fund — Portfolio Market-State Review

structural analysis powered by the Eratosthenes Test · Socrate II Fund — consolidated book (10 mandates, 1 bn) · readings to 14 Sep 2026 · market states over 63 sessions · generated 16 Sep 2026 · fingerprint sha256:3cc7538d82fd47d9...

1 · Executive market-state diagnosis

YOUR PORTFOLIO TODAY: NORMAL — STRUCTURAL DIVERSIFICATION ABOVE ITS OWN HISTORICAL NORM

54 securities, but only 13 effective market directions.

54 positions → 36 by weight → 13 effective market directions

You hold 54 securities. By weight they behave like 36 equally-sized positions. Measured on how they actually move together, the market currently gives this portfolio only **13** effective directions.

Consolidation. Consolidating the 10 mandates reduces annualised volatility from about **10.0 %** (mandates on average) to **9.4 %**: that is the diversification your managers actually deliver once their books are combined.

Where the risk sits. The largest sources of risk are not the largest positions: **Silver** is 2.5 % of capital but 7.5 % of risk; **MSCI_Korea** is 2.0 % of capital but 5.7 % of risk; **MSCI_Taiwan** is 2.5 % of capital but 5.3 % of risk.

Where we are. The portfolio is in a **normal** regime; its structural concentration sits at the **13th percentile** of its own history, and the dependence structure has been **expanding** over the last month.

Measurement geometry. The observed changes of market state show a **48 % geometry gap** under the Eratosthenes protocol; historically that gap is materially larger in stressed states (step excess 115 % in calm quarters, 179 % in stressed ones).

Interpretation. Current realised risk is normal, while structural diversification remains considerably smaller than the number of securities suggests. The Eratosthenes Test does not forecast the next move and does not adjust VaR; it identifies a material difference in how changes of dependence structure are measured.

Risk committee takeaway

	Conclusion
1. Diversification	The consolidated fund is currently more diversified than its own history, but 54 securities still collapse into only 13 effective market directions.
2. Structural change	Diversification has been expanding over the last month, driven notably by declining coupling between countries_em and govt_bonds, countries_em and us_sectors, credit and countries_em; the one-month move sits at the 47th percentile of the fund's monthly moves, the three-month move at the 84th.
3. Model-risk action	Do not mechanically amplify the 4 existing correlation stresses: 4 of them are within 50 % of the admissibility boundary (headroom 1 %, 13 %, 6 %, 10 %) and should be revalidated before use at larger severity. No action required on VaR.

Conclusions address the risk process, not the portfolio: the risk officer asks, the manager decides. No forecast is implied; no buy or sell.

2 · Portfolio anatomy

Measure	Value	How to read it
Positions → effective positions → effective directions	54 → 36.2 → 12.9	names, weights, and how they really move together
Volatility, annualised	9.4 %	typical yearly swing
VaR 95 % · 1 day / expected shortfall	0.83 % / 1.37 %	one bad day in twenty; average of those days
Worst fall, 2 years	-8.8 %	bottomed 8 Apr 2025
Drawdown at risk, 3 months · VaR at 1 month from today's value	8.3 % · -2.7 %	replays of the last two years, flat and history-only
First direction (PC1)	39 %	share of variance carried by the dominant direction

Where the risk sits

Position	Weight	Own vol, annualised	Share of the book's risk
Silver	2.5 %	49.9 %	7.5 %
MSCI_Korea	2.0 %	44.1 %	5.7 %
MSCI_Taiwan	2.5 %	28.7 %	5.3 %
Gold	3.1 %	24.3 %	4.2 %
MSCI_Australia	2.4 %	19.2 %	4.2 %
XLK	2.1 %	26.7 %	4.1 %
MSCI_Mexico	2.5 %	22.7 %	4.1 %
XLV	3.8 %	16.4 %	3.4 %

The mandates

Mandate	Positions	Vol	VaR 1d	Worst fall	Eff. pos.	Eff. dir.	On epicenter	Geometry gap	Now
Mandate 01 · Aggressive	17	11.2 %	0.93 %	-11.8 %	13.9	9.1	—	37 %	calm
Mandate 02 · Aggressive	20	11.9 %	0.99 %	-11.9 %	13.6	8.9	—	39 %	normal
Mandate 03 · Aggressive	14	14.6 %	1.28 %	-11.9 %	10.2	6.8	—	39 %	normal
Mandate 04 · Neutral	18	8.8 %	0.67 %	-9.0 %	15.6	8.1	—	43 %	calm
Mandate 05 · Neutral	24	8.6 %	0.75 %	-8.8 %	17.9	8.5	—	39 %	calm
Mandate 06 · Neutral	25	10.7 %	0.92 %	-10.4 %	17.8	8.7	—	43 %	normal
Mandate 07 · Neutral	25	9.8 %	0.84 %	-10.2 %	20.7	8.3	—	45 %	normal
Mandate 08 · Prudent	14	8.4 %	0.79 %	-7.4 %	10.0	6.0	—	38 %	normal
Mandate 09 · Prudent	15	8.7 %	0.80 %	-7.1 %	12.3	6.0	—	43 %	normal
Mandate 10 · Prudent	13	7.2 %	0.65 %	-6.3 %	11.4	6.0	—	38 %	calm

Consolidation benefit: volatility 10.0 % on average across mandates against 9.4 % consolidated.

3 · Market-state journey — what changed

Question	Answer	Reading
Where are we?	normal regime · concentration 13th pct · 4.2 directions across 8 buckets (88th pct)	the state of the book's dependence structure, ranked in its own history
Where did we come from?	1-month move 1.05 (47th pct of monthly moves) · 3-month move 2.58 (84th pct)	affine-invariant (geodesic) distance travelled between market states
Which way are we moving?	diversification expanding (trace +1.50, 11 % of the step in contraction) · first direction 59 % → 52 %	sign of the change of log-determinant: negative = diversification lost

Where is the movement coming from?

Relationship (buckets)	Correlation a month ago	Now	Change
countries_em – govt_bonds	+0.52	+0.30	-0.22
countries_em – us_sectors	+0.31	+0.12	-0.19
credit – countries_em	+0.63	+0.45	-0.18
gold – govt_bonds	+0.34	+0.18	-0.15
gold – us_sectors	+0.39	+0.24	-0.15

Increasingly loading onto the dominant direction: **commodities** (0.20 → 0.28). Separating from it: **gold** (0.31 → 0.26), **countries_em** (0.34 → 0.29).

Twelve months of direction

Month	Direction	Trace	Contraction share	κ	Directions
10 Oct 2025	expansion	+0.73	33 %	-4 %	4.3
10 Nov 2025	expansion	+0.36	43 %	34 %	4.4
10 Dec 2025	contraction	-0.06	57 %	4 %	4.3
12 Jan 2026	expansion	+0.23	49 %	44 %	4.3
11 Feb 2026	contraction	-0.20	55 %	114 %	4.3
13 Mar 2026	expansion	+0.02	53 %	3 %	4.1
14 Apr 2026	contraction	-2.11	95 %	4 %	3.3
13 May 2026	contraction	-0.99	78 %	5 %	2.9
12 Jun 2026	contraction	-0.71	66 %	55 %	2.7
15 Jul 2026	expansion	+1.37	32 %	60 %	3.3
13 Aug 2026	expansion	+0.88	20 %	52 %	3.6
14 Sep 2026	expansion	+1.50	11 %	29 %	4.2

Descriptive: the direction depends on the observation window and does not forecast the next move.

4 · Eratosthenes model-risk diagnostic

The same changes of market state, measured by a straight ruler and by the affine-invariant ruler: over the whole history the two rulers disagree by **48 %** of the affine-invariant length (geometry gap). The Eratosthenes step κ , by how much each affine-invariant step exceeds the straight one, is 115 % in calm quarters and **179 %** in stressed quarters; the last 21 sessions read 48 %, in the book's calm range. This is a property of the measurement geometry of a correlation-based risk engine, not a VaR correction: it identifies where a flat representation and an affine-invariant representation materially diverge when measuring changes between market states.

Do your stress scenarios remain possible market states?

Scenario (observed shock)	Admissible as specified	Ceases to be a market state beyond	Amplification headroom	Reading
COVID 2020	yes	1.01×	1 %	at the edge
Rate shock 2022	yes	1.13×	13 %	tight
Rotation 2024	yes	1.06×	6 %	at the edge
Synthetic $\rho \rightarrow 0.8$	yes	1.10×	10 %	at the edge

Scaling an observed correlation shock in a straight line stops producing a possible market state at $s^* = 1 / (1 - \lambda_{\min})$, the smallest generalised eigenvalue of (scenario, today's state). We test whether an existing scenario remains admissible; we do not construct better scenarios.

Method and limits

States are correlation matrices of the portfolio's 8 buckets over rolling windows; the Eratosthenes test uses the frozen protocol (21-session window, three historical episodes and one synthetic scenario, thresholds fixed in advance); the market-state journey uses 63-session states one month apart. Effective directions are the exponential of the entropy of the correlation eigenvalues. Forward-looking losses are block-bootstrap replays of the last two years. The level of the geometry gap depends on the estimation window; its regime dependence does not. Direction and impact are descriptive, never predictive. Shares and returns only, no amounts.

Diagnostic, not investment advice. We observe. Prepared by Econosysmographie for Socrate II Fund. No forecast is implied.

5 · Portfolio definition — what was analysed

This review analyses the Socrate II Fund — consolidated book (10 mandates, 1 bn), comprising 10 mandates and 54 securities. Portfolio weights are the weights supplied for the review (book v1 as of 16 Sep 2026, hash demo). The structural analysis maps these securities into 8 market buckets for the market-state calculations; the readings of pages 1 and 2 use the securities themselves.

Position	Bucket	Weight	Position	Bucket	Weight
AGG	credit	5.6 %	Global_Real_Estate	world_sectors	1.7 %
SHY	govt_bonds	5.4 %	MSCI_Canada	countries_dm	1.5 %
LQD	credit	4.3 %	Global_Industrials	world_sectors	1.5 %
TIP	govt_bonds	4.1 %	MSCI_India	countries_em	1.4 %
EMB	credit	3.8 %	Global_Comm_Serv	world_sectors	1.4 %
XLV	us_sectors	3.8 %	DBA	commodities	1.3 %
IEF	govt_bonds	3.5 %	MSCI_SouthAfrica	countries_em	1.3 %
XLP	us_sectors	3.3 %	XLI	us_sectors	1.3 %
Gold	gold	3.2 %	XLE	us_sectors	1.2 %
TLT	govt_bonds	3.0 %	MSCI_Japan	countries_dm	1.2 %
Global_Utillities	world_sectors	2.7 %	NatGas	commodities	1.0 %
XLF	us_sectors	2.6 %	Global_Materials	world_sectors	0.9 %
Silver	gold	2.5 %	MSCI_Turkey	countries_em	0.9 %
MSCI_Taiwan	countries_em	2.5 %	MSCI_Saudi	countries_em	0.9 %
MSCI_Mexico	countries_em	2.4 %	Global_Cons_Disc	world_sectors	0.7 %
MSCI_Switzerland	countries_dm	2.4 %	Wheat	commodities	0.7 %
MSCI_Australia	countries_dm	2.4 %	MSCI_Brazil	countries_em	0.5 %
Global_Cons_Staples	world_sectors	2.3 %	MSCI_Singapore	countries_dm	0.5 %
XLU	us_sectors	2.2 %	XLRE	us_sectors	0.4 %
XLK	us_sectors	2.2 %	MSCI_China	countries_em	0.4 %
XLC	us_sectors	2.0 %	Global_Info_Tech	world_sectors	0.4 %
MSCI_Korea	countries_em	2.0 %	Global_Financials	world_sectors	0.4 %
MSCI_Europe_EZ	countries_dm	2.0 %	MSCI_UK	countries_dm	0.3 %
Global_Energy	world_sectors	1.9 %	Copper	commodities	0.2 %
XLB	us_sectors	1.8 %	Global_Health_Care	world_sectors	0.2 %
USO	commodities	1.8 %	WTI_Brent	commodities	0.2 %
XLY	us_sectors	1.8 %	MSCI_HongKong	countries_dm	0.2 %

Total 100.0 %

54 securities · 10 mandates · 8 structural buckets · weights sum to 100 %

Audit

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