TENSILE RISK

TSRI-C — Tensile Sovereign Resilience Index (Core) · Methodology v1.3

Debt is not the risk. Debt servicing is.

TSRI-C measures the structural capacity of 22 sovereign states (G20 individual members plus Switzerland, Singapore, Norway) to keep financing themselves under stressed conditions. It is not a default-probability model. Scale: 0 = critical fragility, 100 = maximum resilience. Reference year scored one year behind the release (2025Q4 release scores 2024). All inputs are official public data; nothing is estimated, interpolated, or carried beyond documented lag rules.

Indicators, weights and sources — 13 indicators, 4 pillars

Pillar (weight)	Indicator (intra-pillar weight)	Definition	Source
FISCAL SUSTAINABILITY (40%)	Interest / revenue (.40)	Gen. govt interest as % of revenue, derived (GGXONLB–GGXCNL)/GGR	IMF WEO
	Primary balance (.30)	3-yr avg primary net lending/borrowing, % GDP	IMF WEO
	Interest / GDP (.15)	Gen. govt interest payments, % GDP (derived)	IMF WEO
	Gross debt / GDP (.15)	Gen. govt gross debt, % GDP	IMF WEO
MONETARY CREDIBILITY (30%)	Inflation deviation (.45)	5-yr mean abs. deviation of CPI inflation from CB target	IMF WEO / CBs
	CB independence (.35)	Romelli CBI-Extended index (de jure; ≤3-yr carry, flagged)	Romelli (2025)
	Inflation volatility (.20)	5-yr std. deviation of CPI inflation	IMF WEO
STRUCTURAL RESILIENCE (25%)	GDP trend (.30)	5-yr trailing mean of real GDP growth	IMF WEO
	Working-age growth (.30)	10-yr CAGR of population 15–64 (estimates only)	UN WPP 2024
	Rule of Law (.25)	WGI composite estimate (–2.5…+2.5)	World Bank WGI
	Political stability (.15)	WGI composite estimate (–2.5…+2.5)	World Bank WGI
STRATEGIC RESERVES (5%)	Gold % of reserves (.60)	Official gold at market value, % of total reserves	WGC / IMF IFS
	Gold 5-yr trend (.40)	Net official purchases over 5 yrs / opening stock	WGC / IMF IFS

Debt/GDP contributes only 6% of the composite because refinancing capacity — not debt size — has historically explained sovereign stress more effectively. Gold is held deliberately at 5%: a tail-risk buffer, not a thesis.

Normalisation and aggregation — exact formulas

1. Bounds: L(i), U(i) = 5th / 95th percentile of the pooled 2000–2024 country-year panel, frozen for the version. 2. Winsorise: x~ = min(max(x, L), U). 3. Score: S = 100·(x~–L)/(U–L), reversed for higher-is-worse indicators. 4. Pillar: weighted arithmetic mean over available indicators (missing weight redistributed; pillar valid only with ≥60% weight and ≥2 indicators present). 5. Composite: TSRI-C = Π_k max(P_k,1)^w(k) — a weighted geometric mean, so weakness in any pillar cannot be fully offset elsewhere. 6. Countries below 75% total indicator weight are withheld as Insufficient Data, never scored.

Classification — derived, not chosen

Low Risk	62.3–100	Broad shock absorbers; stress absorbable without policy discontinuity.
Moderate	54.1–62.2	Sound position; identifiable single-pillar vulnerabilities.
Elevated	46.5–54.0	Multiple thinning buffers; resilience conditional on benign markets.
High Risk	37.7–46.4	Structural fragility; sustained tightening would strain financing.
Critical	0–37.6	Minimal margin of safety; dependent on exceptional support or repression.

Cuts from Jenks natural-breaks optimisation on 413 scored country-years (2005–2024), version-frozen. Scores within 2.0 pts of a cut are flagged borderline (±).

Robustness gate — publication is conditional

A release publishes only if (i) Spearman ρ vs the PCA-weighted ranking ≥ 0.90 (2025Q4: 0.956, pass) and (ii) every ±5pp pillar-weight perturbation stays within ρ ≥ 0.95 (2025Q4: min 0.984, pass). Entropy-weight and equal-pillar rankings are published as diagnostics at every release (2025Q4: 0.808 / 0.688, disclosed, non-blocking — both differ solely by re-inflating the deliberately small gold pillar). Every datum ships with source, series code, vintage and confidence tier in a machine-readable audit file.

SOURCES (2025Q4 vintages): IMF WEO Apr 2025 · World Gold Council / IMF IFS Q1 2026 · UN World Population Prospects 2024 · Romelli CBI-Extended 2025 · World Bank WGI 2025 revision. Known limitations: external-balance and market-pricing pillars deferred to TSRI Extended (strong external creditors understated); Argentina withheld 2017–20 (IMF published no CPI 2014–16); Singapore withheld on fiscal source coverage. Full methodology paper, reproduction code and audit files: tensilerisk.com ·