GIC Scalar model

Core object

Governance Interoperability Cost (GIC) is the *additional* coordination overhead created by **non-interoperable** regulatory systems across jurisdictions.

Scalar model at three levels

A) Firm-level (micro): (GIC_{firm})

A practical scalar you can estimate from internal ops data:

$$
GIC_{firm} = \sum_{j \in J} \Big(Dup_j + Rep_j + Int_j + Esc_j + Liab_j \Big)
$$

Where each term is measured in either **cost** (AUD/USD) or **time** (staff hours / days-to-launch):

- **Dup** = duplicated compliance processes (parallel controls, parallel attestations)
- **Rep** = reporting non-standardisation overhead (data mapping, format conversions, re-submissions)
- **Int** = interpretive divergence management (legal review cycles, policy memos, supervisory Q&A)
- **Esc** = escalation multiplicity (multi-regulator engagement, remediation coordination)
- **Liab** = liability asymmetry premium (insurance, capital buffers, conservative global standardisation)

This is the “true” model. But it needs firm data.

B) Sector-level (meso): (GIC_{sector})

Aggregate firm-level GIC across firms in a sector, normalised by sector size:

$$
GIC_{sector} = \frac{\sum_{f \in sector} GIC_{firm,f}}{\text{sector revenue or GVA}}
$$

This is what B20 taskforces like (sector reform agenda).

C) Country-level (macro): (GIC_{country})

A **proxy index** capturing the environment that *creates* high firm-level GIC:

- how dense and divergent regimes tend to be, and

- how strong the country's regulatory governance machinery is at reducing duplication and improving coherence.

That's the **GIC Index** below.

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2) A GIC Index you can compute (proxy-based)

You want an index that says:

> "In this country, cross-border interoperability friction is structurally more likely / less likely."

Design principle

GIC Index = "friction pressure" – "interoperability capability."

So we compute two blocks:

Block 1 — Friction Pressure (FP)

Proxies that tend to increase cross-border coordination overhead:

1. **Regulatory proliferation proxy**
   Use trade-relevant regulatory notification intensity as a signal of how often new technical requirements enter the system (not "bad," but contributes to coordination burden). WTO's TBT/SPS notification data is usable here. (data.wto.org)
2. **Market-regulation restrictiveness proxy**
   Use OECD **Product Market Regulation (PMR)** as a standardised measure of economy-wide regulatory restrictiveness and barriers that correlate with compliance overhead and entry friction. (OECD)

Block 2 — Interoperability Capability (IC)

Proxies that tend to reduce coordination cost via better regulatory governance:

3. **Regulatory governance quality proxy**
   Use OECD **Regulatory Policy Outlook / iREG-style** measures that track adoption/strength of regulatory impact assessment, consultation, and ex post evaluation—these are the institutional mechanisms most associated with reducing duplication and improving coherence. (OECD)
4. **Regulatory quality proxy (broad governance)**
   World Bank WGI "Regulatory Quality" can be a macro-level control variable (captures perceptions of ability to formulate/implement sound regulation). (World Bank Open Data)

Compute the index

All indicators are scaled to 0–100 (percentile or min-max). Then:

$$
GIC\ Index = w_1 FP_{WTO} + w_2 FP_{PMR} - w_3 IC_{OECD} - w_4 IC_{WGI}
$$

Default weights (start defensibly, tune later):

- $w_1=0.25$ (WTO notification intensity)
- $w_2=0.25$ (PMR)
- $w_3=0.30$ (OECD regulatory governance)
- $w_4=0.20$ (WGI regulatory quality)

Why this weighting? Because your thesis is "**architecture** matters": regulatory governance capability should dominate the signal.

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3) Cross-country comparative dataset (what to build)

Countries (starter set)

Pick an "advanced economy set" you can defend in ICC/B20 contexts:

G7 + Australia + South Korea + Netherlands + Singapore + New Zealand + Sweden (or EU avg)

Dataset schema (CSV-ready)

Table: `gic_country_year.csv`

Mandatory columns (all public proxies):

- `country`
- `iso3`
- `year`

Friction Pressure

- `wto_tbt_notifications` (count)
- `wto_sps_notifications` (count)
- `wto_notifications_per_million_pop` (derived)
- `pmr_overall` (OECD PMR overall score)

Interoperability Capability

- `oecd_reggov_index` (composite you build from OECD regulatory governance dataset—e.g., oversight/consultation/ex post review where available) (OECD Data Explorer)
- `wgi_reg_quality_percentile` (World Bank WGI) (World Bank Open Data)

Normalised fields

- `fp_wto_0_100`
- `fp_pmr_0_100`
- `ic_oecd_0_100`
- `ic_wgi_0_100`

Index outputs

- `gic_index_raw`
- `gic_index_0_100` (rescaled where higher = worse interoperability cost environment)

Where each input comes from

- OECD regulatory governance dataset (downloadable/explorable via OECD data explorer). (OECD Data Explorer)
- OECD PMR methodology + database references (PMR is a recognised cross-country standard). (OECD)
- World Bank WGI Regulatory Quality indicator. (World Bank Open Data)
- WTO TBT/SPS notifications datasets (as a proxy for regulatory flow). (data.wto.org)

How this becomes "real" fast (without pretending precision)

To make this ICC/B20-useful quickly, do it in **two phases**:

Phase 1 (2–3 pages in the paper)

- Publish the model + the index definition + the dataset spec
- Include a *prototype table* for ~10 countries for the latest common year you can assemble
- Make it explicit it's a **proxy index** and invite collaboration for refinement

Phase 2 (where it becomes a true unlock)

Add one of:

- a sector slice (banking, fintech, ESG disclosure), or
- one cross-border “corridor” (AU–EU, US–EU, SG–AU), or
- a firm pilot (anonymous) showing GIC hours/cost vs the index.

That’s when “naming → measuring” happens.

Best for what?

If the objective is:

- **Intellectual credibility** → Broad OECD set.
- **ICC/B20 influence** → Strategic advanced-economy comparison.
- **Fast execution + strong signal** → Focused high-governance hubs.
- **Building toward Constellation leverage later** → Finance-centric set.

You cannot optimise all four at once.

So I'll choose for you based on your trajectory.

The Best Choice:

G7 + Australia + Singapore + South Korea + Netherlands + Sweden

Why this set?

1️⃣ It hits political weight

G7 gives you:

- US
- UK
- Germany
- France
- Italy
- Canada
- Japan

These are core ICC/B20 countries.

2️⃣ It adds governance exemplars

- Singapore (interoperability reputation)
- Netherlands (EU regulatory gateway)
- Sweden (high governance + innovation)
- South Korea (tech-heavy regulated economy)
- Australia (your anchor)

That gives you:

- Dense governance economies
- Different regulatory architectures
- Different legal traditions
- Trade exposure variation
- Financial hubs
- Digital hubs

It's diverse enough to be serious.
It's small enough to execute quickly.

Why Not OECD Top 20?

Too broad.
Data cleaning explodes.
Signal gets diluted.
Takes months.
You stall.

You don't need breadth yet.
You need clarity.

Why Not Finance-Only Hubs?

Too niche for a first paper.
Feels like sector lobbying.
Limits ICC breadth appeal.

Why This Set Is Strategically Smart

It lets you show something like:

> "Even among the most advanced, high-governance economies, interoperability cost varies meaningfully."

That’s powerful.

You’re not saying:
“Emerging markets are chaotic.”

You’re saying:
“Among mature economies, architecture matters.”

That’s sophisticated.

The Real Advantage

With this set, you can:

- Rank them.
- Show relative dispersion.
- Create a simple visual.
- Propose a GIC corridor comparison (e.g., US–EU vs SG–AU).
- Build an annual index later.

It becomes scalable.