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WORKING PAPER

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Not efficient, not optimal

The biases that built global trade and the data tools that could fix it

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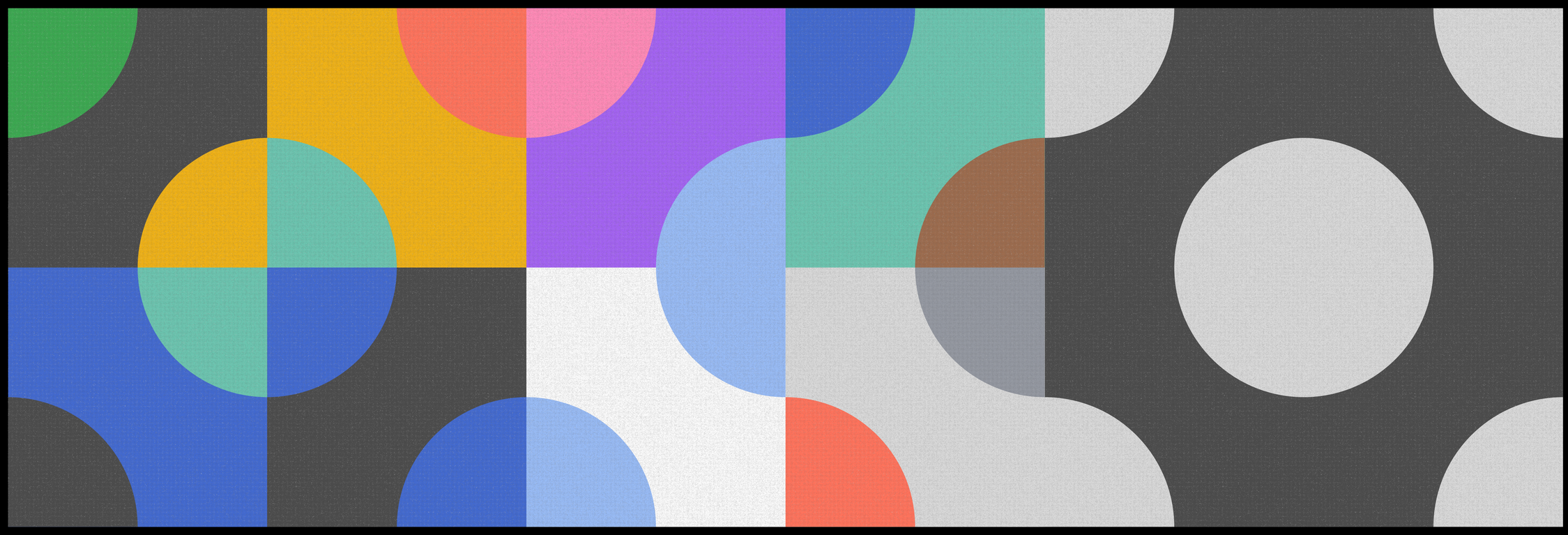


Did globalization really go too far?

Recent uncertainty around trade policy and a shifting geopolitical order have reignited debates about globalization.

Critics argue that companies **over-optimized supply chains** for cost against resiliency, enabling states to **“weaponize interdependence”** (Farrell & Newman, 2019).

But what if this critique rests on a flawed premise?

Metrics suggest globalization **never reached the theoretical ideal** of a fully optimized, globally efficient system.

As Pankaj Ghemawat (2007) notes, the world remains in a state of **“semi-globalization”**, where cross-border trade remains limited and stagnated.

While countries set the stage through trade policy, **it is ultimately firms that shape trade flows** by choosing to source, invest or sell abroad.

Only few firms are truly global

20%

of manufacturing firms export in the U.S. (Bernard et al., 2007)

80%

F500 firm’s revenues come from their home region (Rugman & Verbeke, 2004)

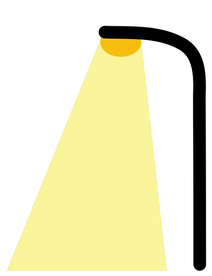
Only the **most productive firms** export, with a few large firms accounting for most export volume. Smaller firms typically only serve the domestic market (Melitz, 2003).

Exporting is costly, firms must have a clear competitive advantage to expand abroad. A part of national trade reflects the **success or failure of a few key firms** (Gaubert & Itskhoki, 2021).

Multinational enterprises follow **regional strategies** through Factory Asia, Factory Europe, and Factory North America models (Antràs & Chor, 2021), balancing cost with risk, familiarity, and convenience.

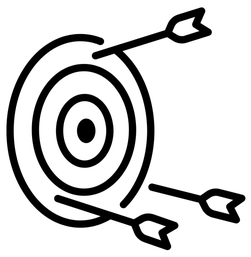
Managers don’t always make the best decisions

Managers make decisions under bounded rationality, facing incomplete information, and often relying on heuristics which can lead to flawed assessments of foreign opportunities (Kocoglu and Mithani, 2024).

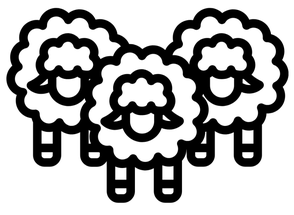


Streetlight effect
Searching for opportunities only where it’s easiest or most familiar

Anchoring bias
Sticking too closely to initial plans or past choices, even when better options exist

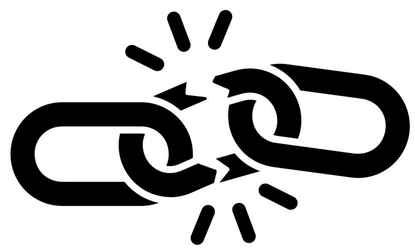


Overconfidence
Failing to anticipate local consumer behaviour and regulatory nuances



Herd mentality
Following what others are doing without doing your own due diligence

Efficient supply chains are not fragile by default



The "made in the world" production system proved to be robust during the pandemic, adapting to shocks by rerouting flows.

Thakur-Weigold & Miroudot (2024) find **no systematic tradeoff** between cost efficiency and resilience in lean, globally dispersed supply chains.

Resilience can coexist with efficiency through smart design by adding redundancy where it matters and flexibility elsewhere, without abandoning cost discipline.

This can be achieved with **risk management**, **flexibility**, and **collaboration**.

- Inventory buffers
- Multi-supplier & geographic redundancy
- Flexible logistics routes & sourcing mechanisms

National security and the second-best trap

Access to key goods and technologies is increasingly seen as a strategic priority, even at the expense of efficiency, to reduce the **risk of coercion or supply disruptions**.

Policies like **reshoring** and **friend-shoring** aim to reduce vulnerability, but often respond to recent shocks or political pressures rather than reflect holistic optimization.

These shifts may simply replace **one second-best configuration with another**. Evidence shows that U.S. firms moved sourcing from China to Vietnam or Mexico, rather than reshoring.

Grossman et al. (2023) find that **subsidizing supplier diversification** is often more efficient than outright reshoring.

True resilience requires **smart, balanced trade-offs**, not blanket de-globalization.

Data tools to close the efficiency-resilience gap

Big data + AI/ML help firms move beyond heuristics toward smarter, risk-adjusted optimization of supply chains.

Example use cases for firms:

- Supply chain network risk mapping (Farrell & Newman)
- AI-driven demand forecasting (Agrawal et al.)
- Spatial modelling of labor, infrastructure, and political risk to inform location decisions

What it enables:

- Better supplier selection using performance and risk data
- Smarter inventory and sourcing through real-time analytics
- Discovery of overlooked locations beyond familiar hubs
- Multi-objective optimization of cost, risk, and resilience

Governments can use supply chain mapping and risk modelling to target diversification incentives more effectively.