Reflecting on WDR2020 on GVCs:
What did we get right? What did we get wrong?

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A World Bank Group Flagship Report

TRADING FOR DEVELOPMENT IN THE AGE OF GLOBAL VALUE CHAINS

WORLD BANK GROUP

What makes Global Supply/Value Chains Special?

TWO defining characteristics of GSCs:

1. Fragmentation of production and associated hyper-specialization

2. Firm-to-firm relationships (i.e., relational as opposed to anonymized trade)

GSCs and Development

Are GSCs good for development?

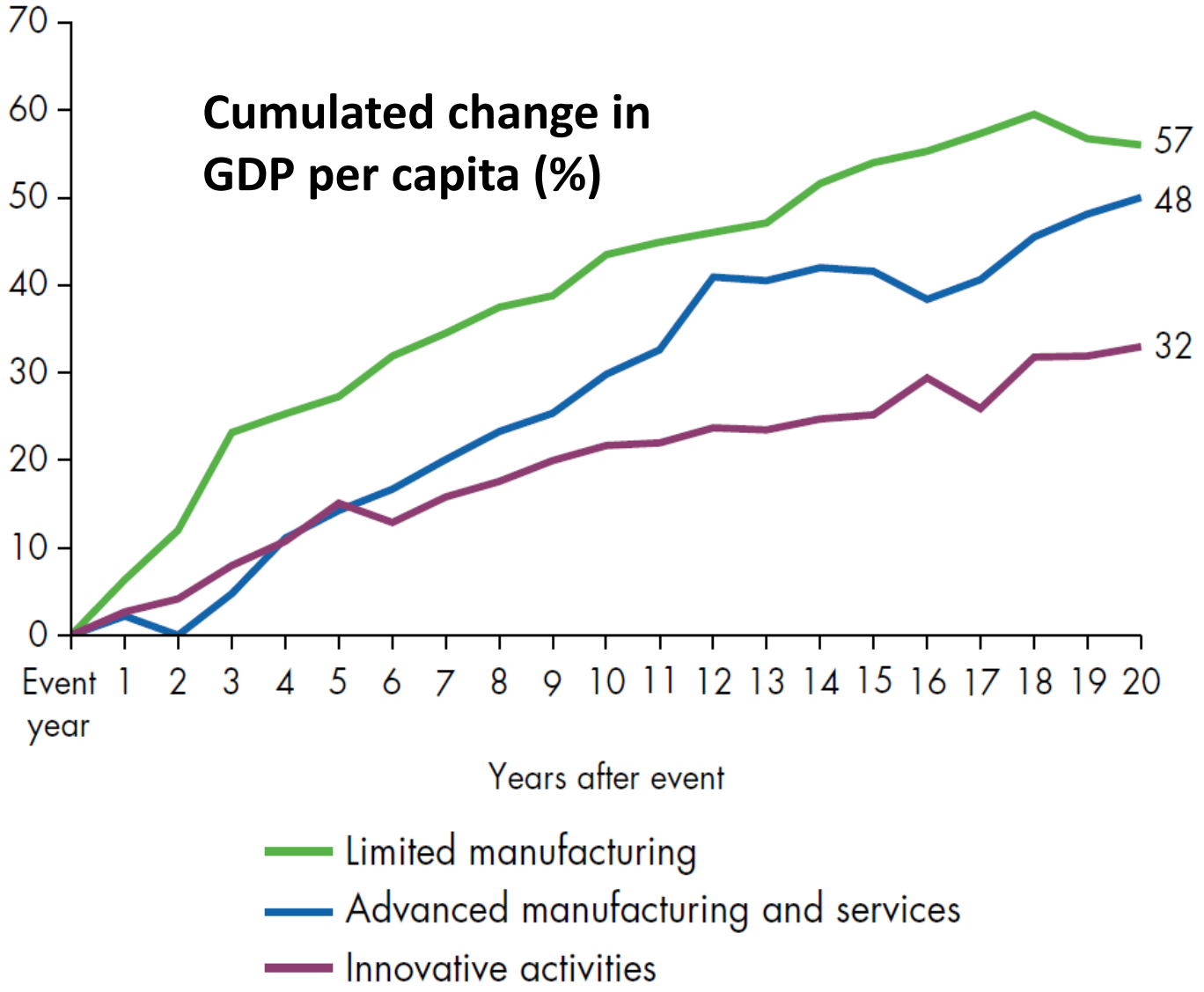
+ Fragmentation means that developing countries can participate without having developed full capabilities

+ “Relations” foster knowledge and technology transfer

- Countries can get “stuck” in low-value activities

Evidence?

Incomes grow most when countries break into limited manufacturing



Global Value Chains

- Powered an economic revolution
- Boosted economic growth
- Reduced poverty

Other Important Insights/Contributions

- GVCs and Women
- GVCs and the Environment
- GVCs and New Technologies (Automation, Digitization, AI…)
- Highlighted the Importance of International Cooperation and a Rules-Based System

What Did We Miss?

- Word “resilience” appears once in the WDR in the context of green growth

- No mention of “choke” or “pressure” points

- Section on Macroeconomics (brief) focused on synchronization of economic activity across countries, but with focus on:
  - Transmission of Inflation
  - Effects of Exchange Rate Movements

But this was a different time….

FOUR Phases in the Backlash Against the Old World Trading System

	Years	Drivers/Concerns about	Consequences
Phase 1	2016-2020	Unfair competition b/w countries Labor market disruption Regional inequality	Brexit US-China Tariffs Trade: robust
	WDR		
Phase 2	2020-2022	Supply chain resilience Catalyst: COVID-19	None Trade: robust
Phase 3	2022-2025	National security Resilience to geopolitical risks Catalyst: Invasion of Ukraine	Decoupling from Russia (in Europe and US) and China (in the US) Trade: Robust but Polarized
Phase 4	2025-Present	US discontent with trade order Catalyst: US Presidential Elections	Tariff Escalation, Bilateral Bargaining Trade: ???

What is “Resilience”?

Markus Brunnermeier (2021), *The Resilient Society:*

“Bend but not Break”

(Reed vs. Oak)

❖But how do we operationalize this notion?

❖And how do we benchmark it? What is the desired level of resilience?

→ **Conceptual Issues**

Resilience can only be evaluated with respect to specific shocks

- Supply, Demand, or Both
- Sector- , Country-specific, or Both
- Idiosyncratic or Systemic

Note that COVID-19 was:

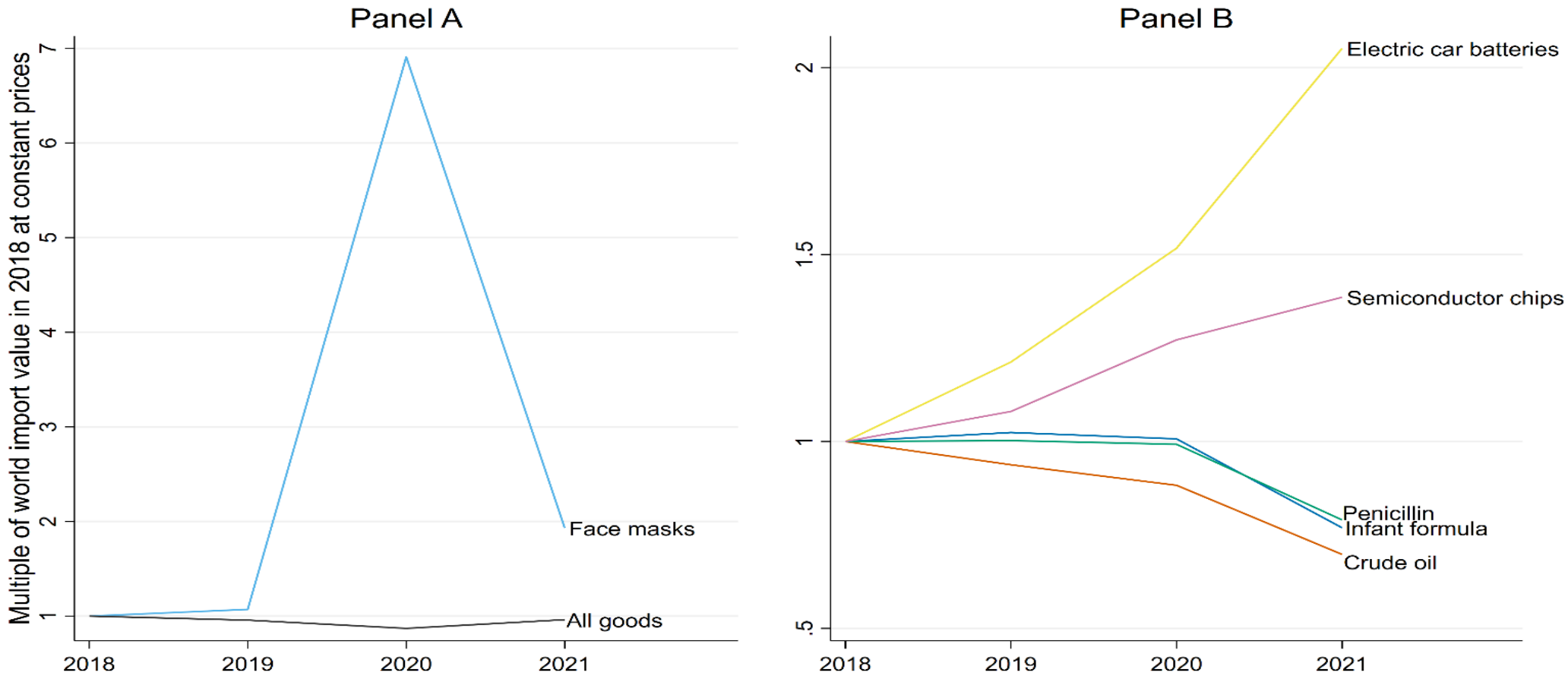
- Both supply and demand shock
- Global (though not synchronized across countries)
- Arguably, the largest global shock post World War II.

Judged by the "bend but not break" criterion, the world economy proved incredibly resilient during 2020-22 and international trade contributed to this resilience!

Resilience and Trade during COVID-19

- Trade volumes declined during 2020, but rebounded in 2021
- Firm-to-firm import relationships were not disrupted though import volumes declined (Goldberg and Reed, Brookings 2023)
  - Imports were bent but not broken
- Because COVID waves were not synchronized across countries, imports of PPE eased domestic bottlenecks.

Imports of some critical goods during COVID-19



Source: COMTRADE, U.S. Bureau of Labor Statistics (BLS)

- Plenty of additional evidence based on simulations in quantitative trade models

  → COVID economic effects would have been more severed with trade/GVCs

- Evidence consistent with a point made by Caselli, Koren, Lisicky, and Tenreyro (*QJE* 2020):

- Does trade made an economy more or less resilient to shocks (in the sense of being exposed to volatility)?
- Answer depends on whether the shock is country- or sector-specific
- In recent decades, country-specific shocks dominate the data
- As a result, trade has made economies MORE resilient

→ **Resilience cannot be judged without reference to the type of shock!**

GVCs and Geopolitical Risk

- In 2022, a different type of shock: Russian invasion of Ukraine

  - ➢ Exposed fragility of trade to geopolitical risk

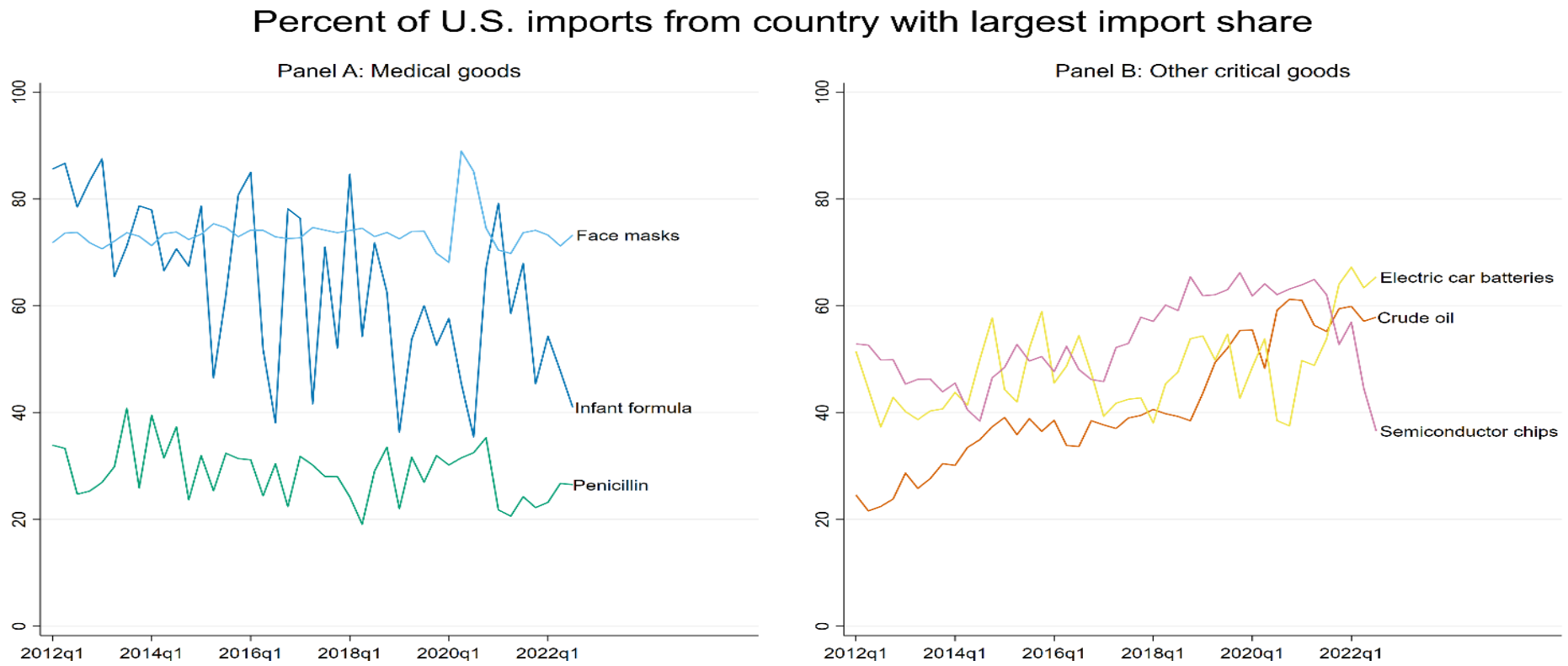
  - ➢ Risks of excessive international specialization, i.e., concentration in the imports of critical products (European energy imports from Russia)

  - ➢ *By analogy*: The US may be equally vulnerable to risks associated with China.

  - ➢ National Security: Primary Concern!
    - ❖ Focus on Dual Goods: Goods that have both military and civilian use

Question: How Concentrated Are Markets for Imports?

Answer: Markets For Critical Goods Are Very Concentrated



Source: US Census Bureau (2022).

Many other examples from specific GVCs

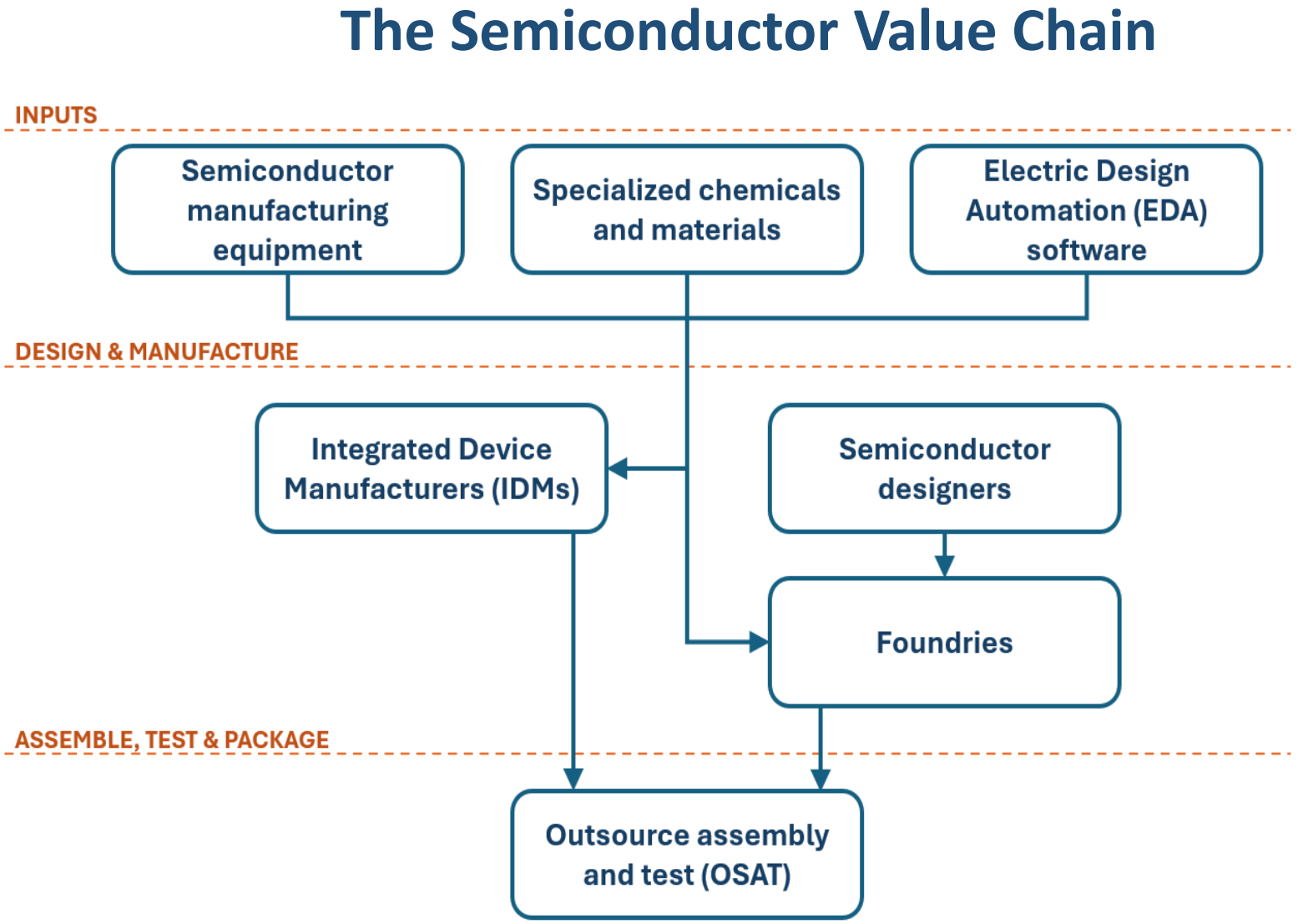
- **Semiconductors:** 96% of advanced logic chip production in a single firm, TSMC in Taiwan. Monopoly of a Dutch firm, ASML, in photolithography equipment

- **Lithium and Rare Earths:** China dominates the processing

Indicate the Existence of Choke points

Valid Argument for Diversification!

BUT: Diversification does not obviate the need for International Cooperation



Simplified version of Bown (2020)

Where do we stand today?

- Global trade robust, but
- Its nature has changed → GVCs have adjusted
  - ➢ Trade is increasingly *within* blocs, less *across* blocs

Polarization

Question:

→ Given that the GVC realignment was in response to demand for "resilience", is the new trade configuration "more resilient"?

Think of "resilience" as in CKLT (QJE 2020) – i.e., lower volatility

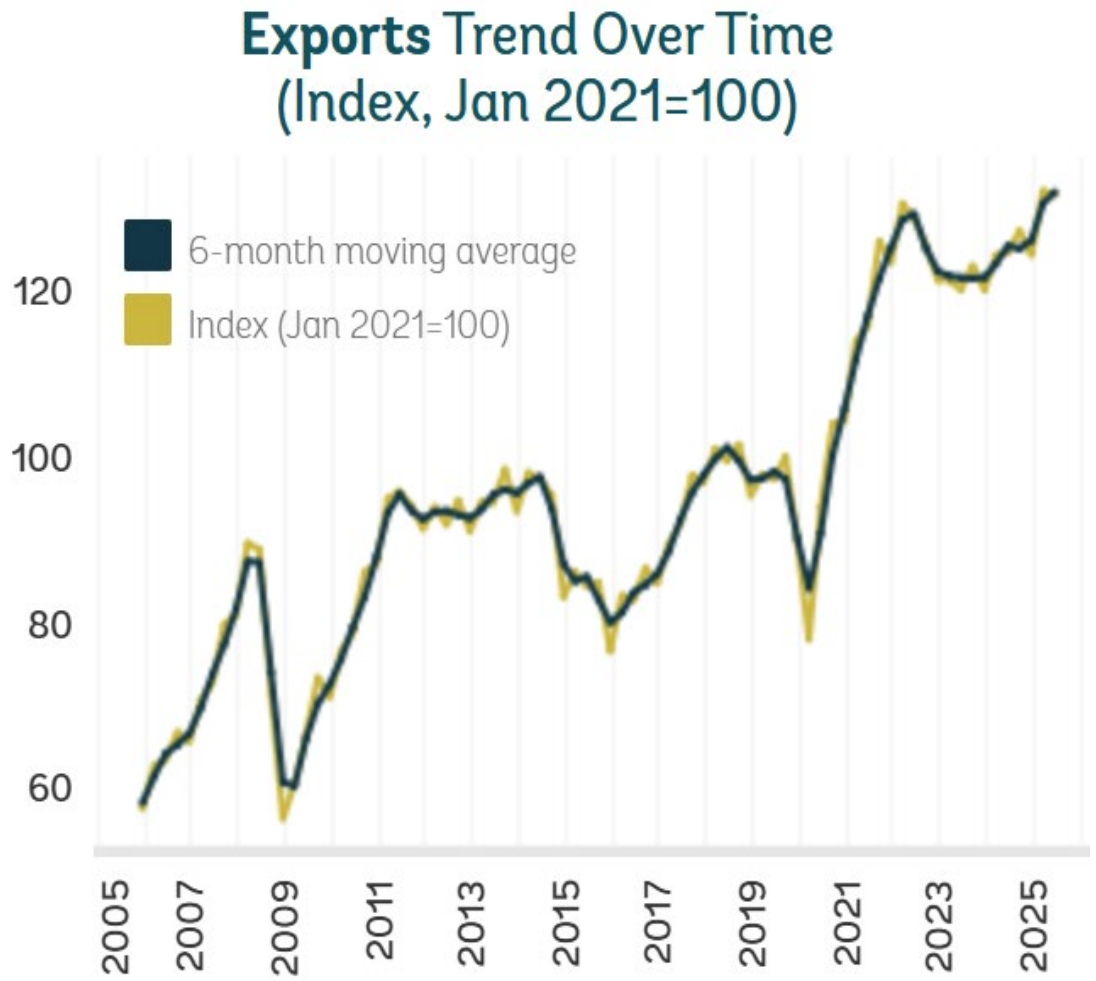
→ Trade reconfiguration and increased polarization may matter for volatility: it erodes cross-country diversification.

New Project with Erhan Artuc, Daniel Lasso, and Daria Taglioni

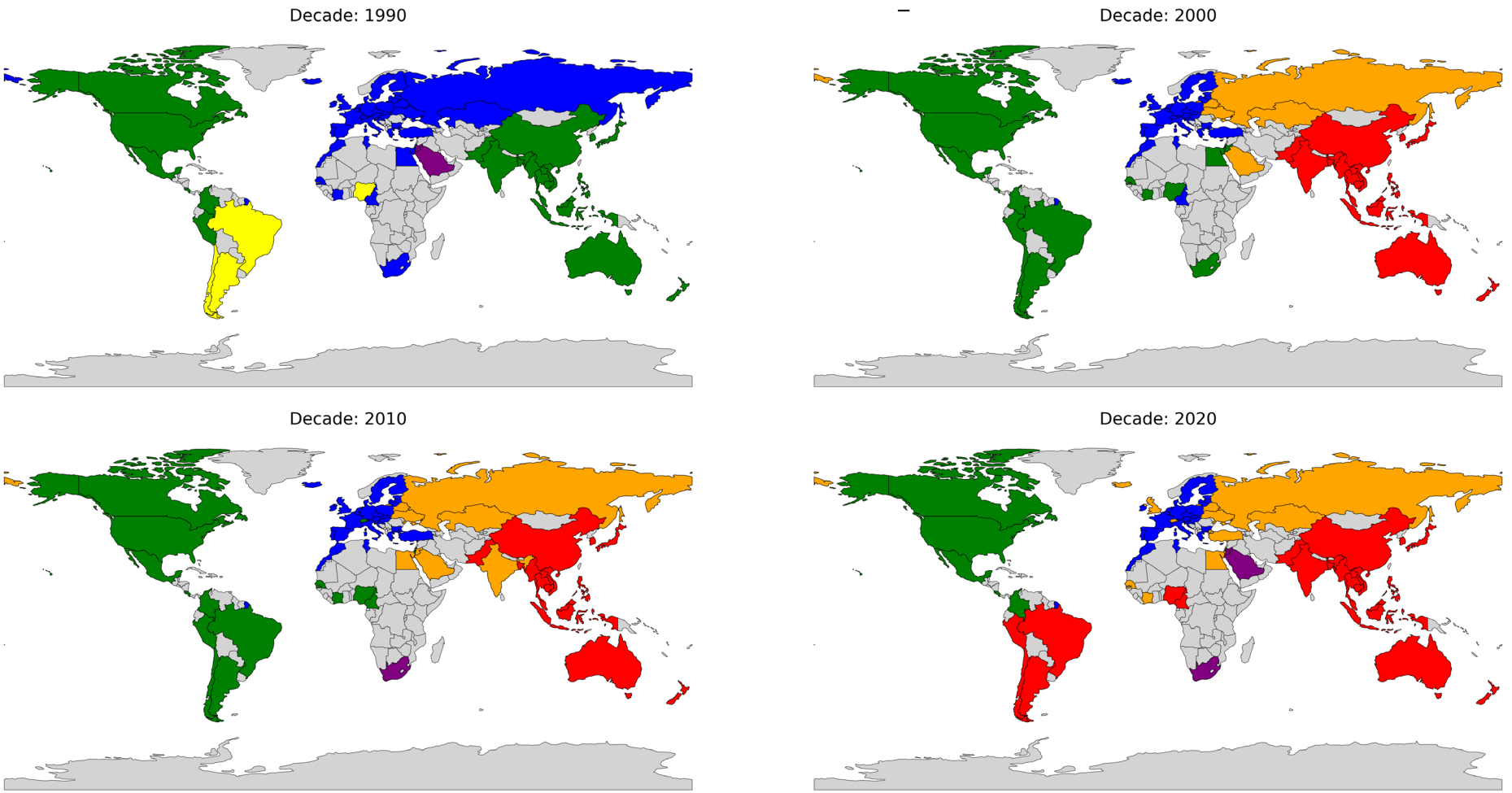
Earlier Work by ALT:

- Construct “trade communities” based on network analysis
- Document trade patterns
- THREE main patterns:
    1. Global Trade is increasing
    2. Trade Communities are changing
    3. Polarization → Less trade across communities

1. Global Trade remains robust

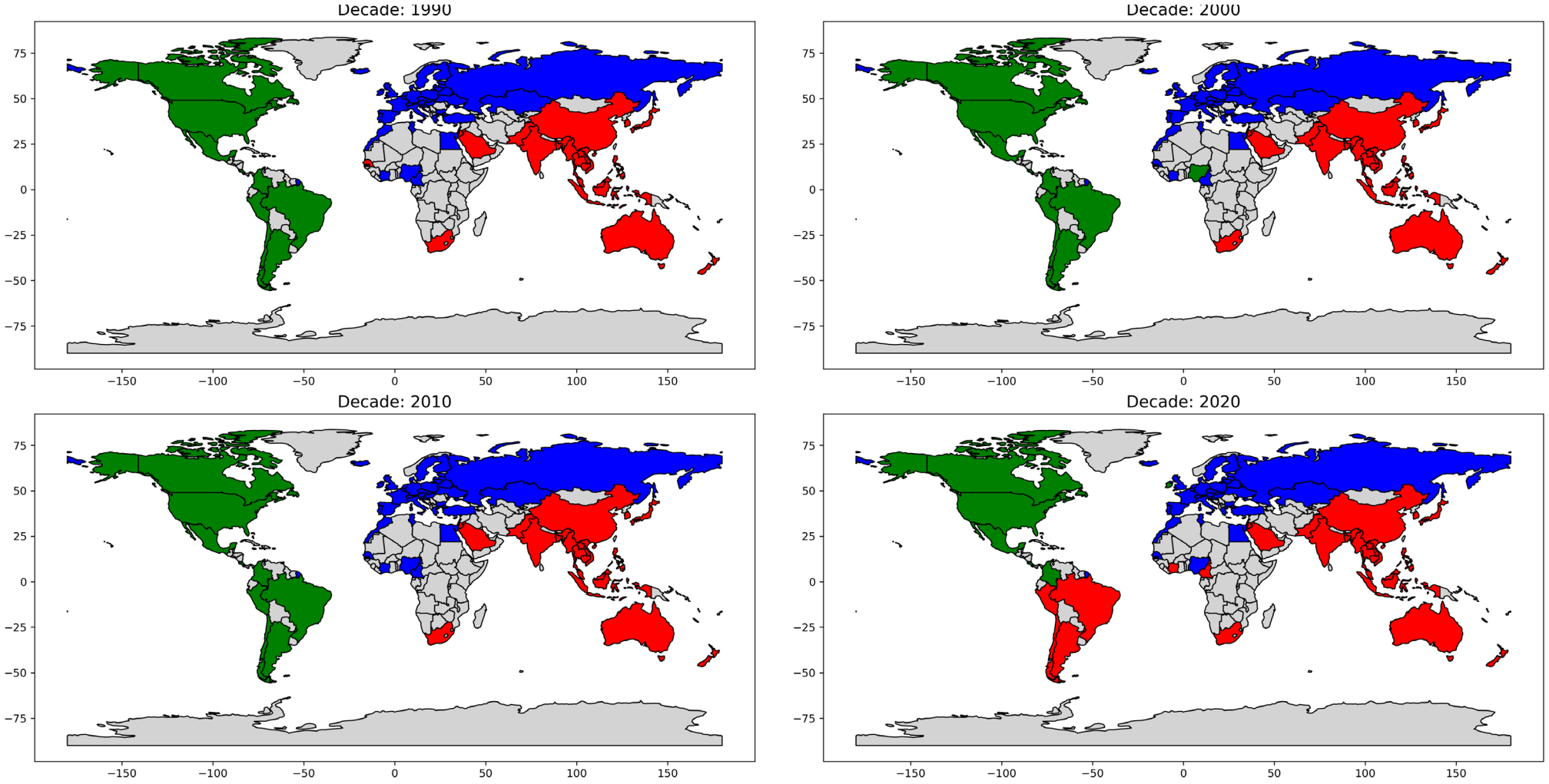


2. Shifting Trade Networks



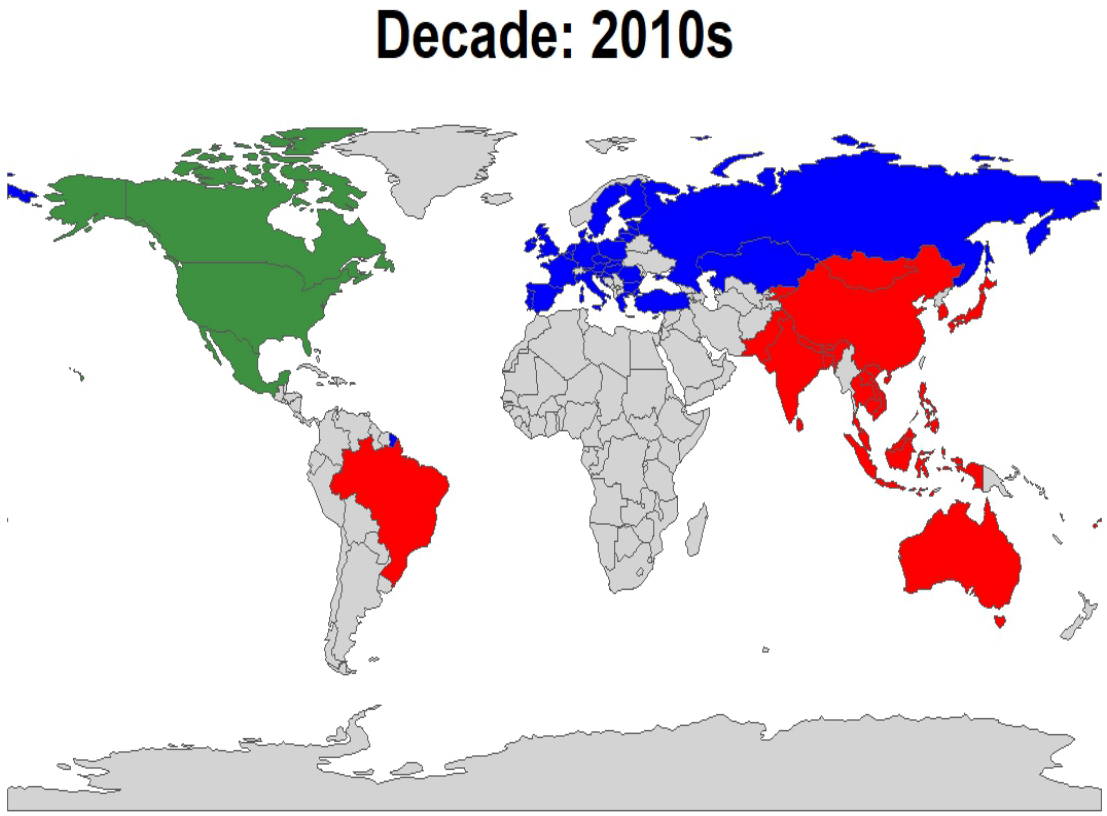
Source: Authors' estimates based on ADB IO tables. Trade network built from COMTRADE total bilateral trade. Communities estimated using the Greedy Modularity Algorithm (networkX; Hagberg et al., 2008). Each color represents a distinct trade community.

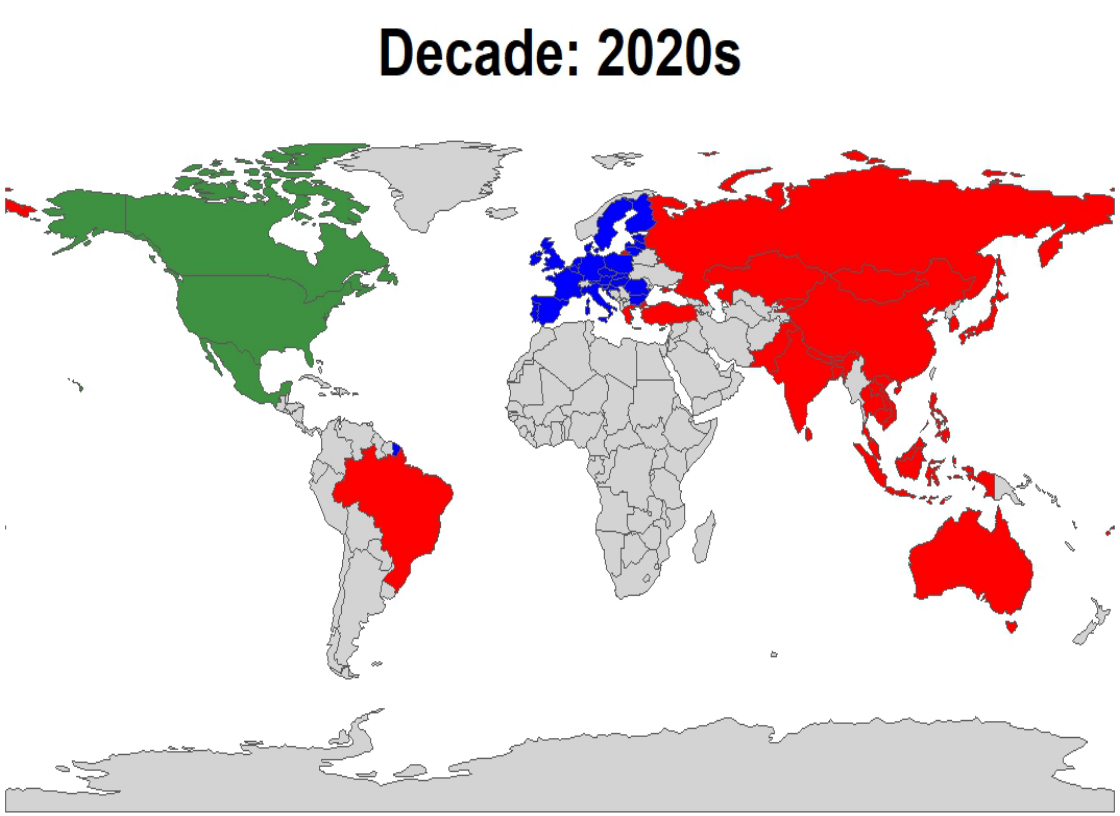
Reorganization of GVCs



Note: GVC trade network using TIVA (2023), covering data up to 2021 (pre-Russia-Ukraine war). Communities estimated using the Greedy Modularity Algorithm from the networkX package (Hagberg et al. 2008). Each color represents a distinct trade community.

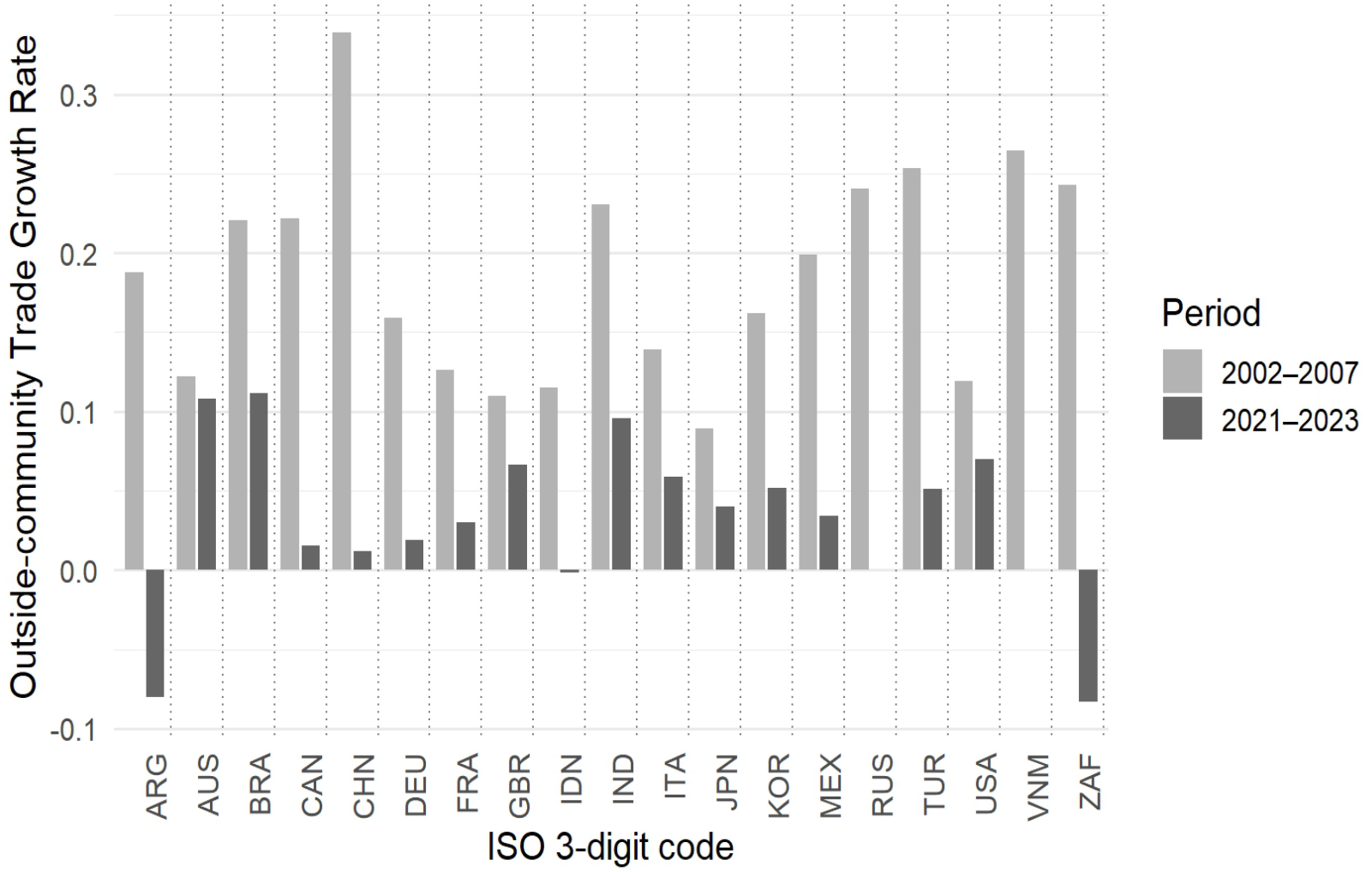
Eastward Shift post-2021
ADB-based GVC communities (up to 2023)





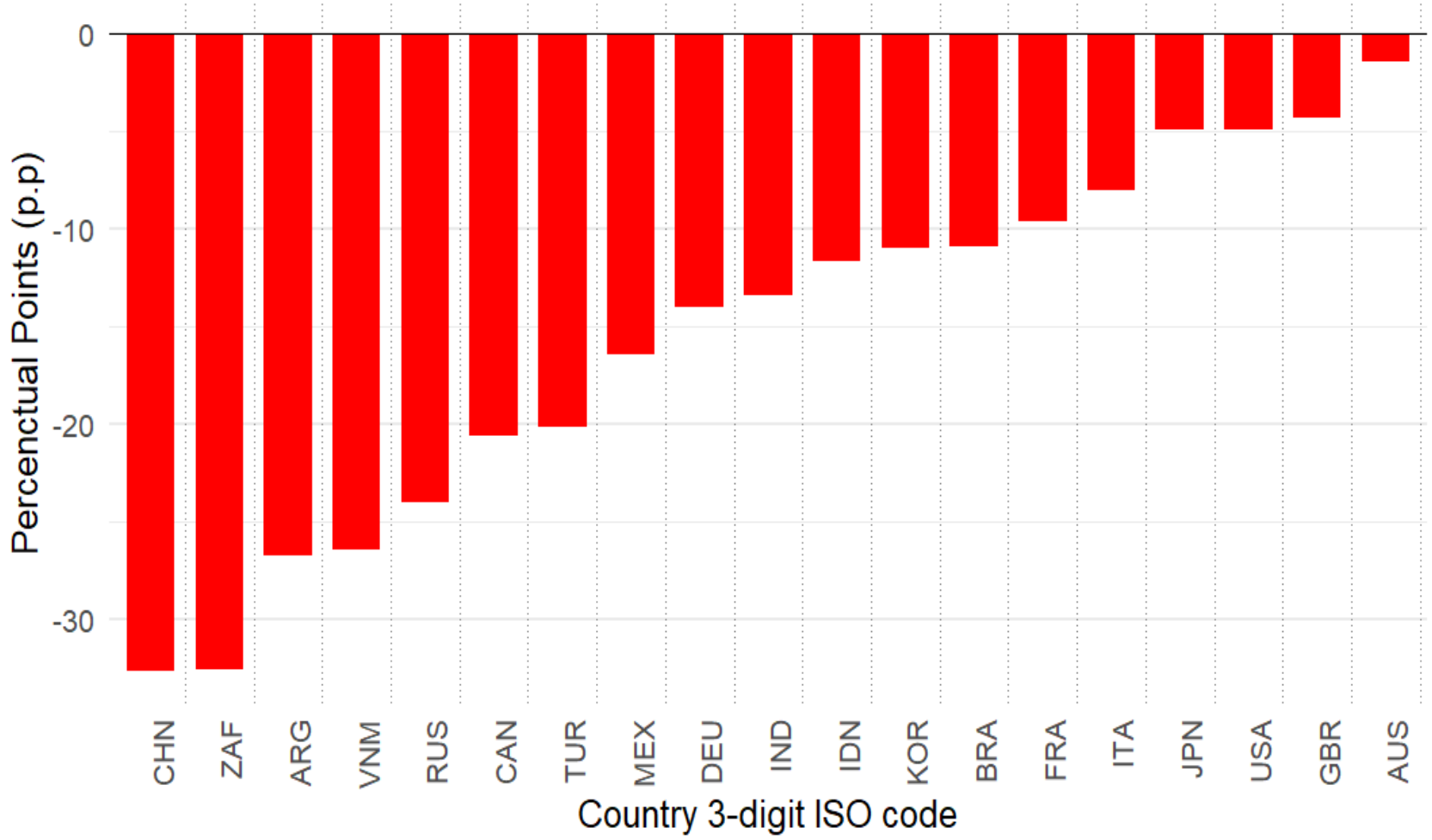
Source: Authors' estimates based on ADB IO tables. GVC trade network using ADB (2025), covering data up to 2023 (incl. Russia-Ukraine war). Communities estimated using the Greedy Modularity Algorithm from the networkX package (Hagberg et al. 2008). Each color represents a distinct trade community.

3. Polarization: Cross-Community Trade Growth has Slowed Down



Source: Authors' estimates based on COMTRADE data.
Note: CAGR of the outside-community trade between 2002-2007 and 2021-2023 period.

Cross-Community Trade Growth: Then vs. Now



Source: Authors' estimates based on COMTRADE data.
Note: Difference in outside-community trade compound annual growth rate between 2000s and 2020s (CAGR21-23 − CAGR02-07), G20 countries ranked by ascending order.

Back to the Question: Resilience/Diversification through Polarized Trade?

- Quantitative Framework as in CKLT (2020): Multi-Sector Eaton-Kortum-Caliendo-Parro Model with Stochastic Shocks.

- Two opposing mechanisms:
  - **Sectoral specialization**: can increase volatility if trade raises concentration in few sectors.
  - **Cross-country diversification**: lowers volatility when country shocks are imperfectly correlated.

- Quantitatively, CLKT found that globalization (1970–2007) reduced volatility by 36% on average, with the diversification channel eight times stronger than specialization.

- Key insight: When domestic shocks dominate, trade is insurance; when global shocks dominate, it amplifies exposure.

Apply a modified version of this framework to an extended period:

Period: 1995-2022

1. 1995–2007: Hyperglobalization
2. 2007–2015: Slowbalization
3. 2015–2022: Polarization — trade still increasing, but increasingly intra-bloc

Our question: *Does globalization retain its volatility-smoothing and growth-enhancing effects when trade becomes polarized? Does polarization perhaps further reduce volatility (by reducing exposure to more volatile partners outside the community?)*

Preliminary Results

- Signs are stable; magnitudes shift with phases—consistent with polarization reducing cross-bloc risk-sharing.

- The diversification effect persists but weakens after 2007 (as trade cost asymmetries grow and cross-bloc trade shrinks).

- The specialization channel increases in importance after 2007 (compared to the diversification channel).

→ No evidence that polarization has contributed to resilience (as measured by volatility)

Concluding Thoughts

- Proud of WDR2020
- If we were to write it today, we would have a large section on “Resilience”
- But I doubt that this would have reversed our main conclusions and recommendations
- We live in a very different world today (trade tensions; unpredictability and uncertainty; non-cooperative EQ). Not clear what the future of GVCs is. But clear that growth and international risk-sharing will suffer from increasing polarization.

Thank you!