

The Changing Nature of Globalization and its Implications for Development

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Motivating Observations

- Several developing economies exhibited historically unprecedented growth post WWII, esp. during 1990-2020 (era of “hyperglobalization”)
- This growth is often attributed (at least partially) to trade and globalization → export-led growth
- But trade and trade policy have changed significantly in the past ten years
 - Automation; Climate Change; Protectionism; Industrial Policy...
- What do these changes imply for the future of economic development?

Road Map

- I. How has trade/globalization contributed to development in the past?
- II. What is different today?
 - A. Structural Changes
 - B. Policy Changes
 - C. Geopolitics
- III. How will these changes affect development?
- IV. Conclusions

I. Trade and Development: What does trade theory tell us?

- Trade theory makes statements about “welfare”, “real income”, and “growth”
- But “development” is not synonymous with the above, though positively correlated.
 - Goldberg and Reed (ECMA 2023): Growth \neq Poverty Reduction
 - UN’s 17 Sustainable Development Goals (incl. poverty reduction, education, clean water, gender equality, etc.)
- Here: Development is a process towards achieving these goals. Real Income Growth is one (very important) component of it.

Trade and Development: A Puzzle

- Let's focus on Growth alone for now...
- Trade theory features several mechanisms (old and new) through which trade raises real incomes
- But none of these mechanisms, can generate – quantitatively - the magnitudes of growth developing countries experienced in the near past.

A Puzzle (contd.)

- Comprehensive and informative overview in Costinot & Rodriguez-Clare, HIE 2014 (CRC).
- Note that highest welfare gain a model can produce is 96% (corresponds to a model with intermediate inputs, monopolistic competition and heterogeneous firms applied to Slovakia when moving from autarky to free trade).
- Korea's GDP per capita increased 30-fold between 1960 and 2020, and the liberalization was much less drastic.

A Puzzle (contd.)

- Hence, tension between widely held belief that trade contributed to development in the past decades and quantitative models.
- Main issue: Models operate via the forces of STATIC comparative advantage.
- More promising path: Distortions
(Atkin & Donaldson, HIE 2022; Atkin & Khandelwal, ARE 2020)
- Indeed, trade “may” help alleviate misallocation resulting from non-trade related distortions or even reduce some of these distortions
- Distortions are likely more prevalent in developing countries.
- BUT: Not all distortions matter equally. Example: Market Power

Framework in the Present Work

(in the Tradition of the Structural Transformation Literature)

- Goldberg and Reed (ECMA 2023) → TWO conditions for “Development”:
 - Need an initial income boost (example: AG; Oil; NR)
 - Dynamic process that will affect the structure of the economy



- Static vs. Dynamic Effects of Trade/Globalization
 - Static: Classic forces of (static) comparative advantage
 - Dynamic: Set in motion processes that affect endowments, technologies, institutions, and change the structure of the economy.

Trade and Development: Static Effects

- Static Comparative Advantage. Developing Countries:
 - Agriculture (AG)
 - Natural Resources (NR)
 - Low-skill labor intensive manufacturing
- AG and NR have delivered positive income boosts, but not “Development”:
 - Stiglitz: “If Korea had relied on (static) CA, it would be still producing rice”
 - AG still highly protected in advanced economies
 - NR → Resource Curse

Trade and Development: Static Effects (contd.)

- Low-skill labor intensive manufacturing important!
→ Export-led Growth!
- Initial boost:
 - Gave developing economies initial boost in sector where they had CA
 - Initial export success did not require labor force or product upgrading
 - Development process was self-financing. Success did not rest on foreign aid. Did not require big upfront capital investments.
 - Access to foreign markets meant the increase in production did not hurt their terms of trade
- BUT: Static Forces of CA not sufficient. MF exports played an important role in the context of a dynamic process
 - MF has important technological spillovers → Engine of Growth!

Trade and Development: Dynamic Effects

How did trade in low-skill MF set in motion or accelerated dynamic processes that led to “development”?

- Market Size: Access to large and lucrative markets enabled adoption of modern technologies → Scale Effects (Goldberg & Reed, ECMA 2023)
- Technology Upgrading and Productivity Increase through:
 - Learning through exporting & importing
 - Technology Transfer (voluntary or forced) through Joint Ventures, FDI
 - Firm-to-Firm Interactions within Global Value Chains (GVCs)
- Institutions:
 - Adoption of enforceable rules (e.g., in Deep Trade Agreements), which act as a commitment device for institutional reforms in developing economies.
 - Also, trade-induced growth changes institutions

Preconditions for Dynamic Effects

- **Technological Developments**
 - Production Fragmentation
 - Decline of Trade (esp. Information & Communication) Costs; Containerization
- **Policy**
 - Embracing of Multilaterism; Expansion of WTO; Limited Industrial Policy in Advanced Economies; Other Commitments in RTAs (e.g., Investment Protection)
- **(Geo)Politics**
 - Peace, Stability and Predictability (partly as a result of end of Cold War and partly as a result of “Policy”)
 - Economic efficiency more important than political ideology → trade with China, Vietnam
 - Support for US allies (Korea, Taiwan)

→ From the perspective of developing countries, all these preconditions may be changing going forward!

II. What is Different Today?

A. Structural Changes

- Limits of Fragmentation → Future of GVCs?
- Technology: Automation, Digitalization, AI
- Climate Change

B. Policy Changes – in Advanced Economies!

- Shifting Priorities in Advanced Economies: Domestic Labor; Climate Change; Resilience; National Security
- Economic Nationalism, Protectionism, Waning Multilaterism
- Resurgence of Industrial Policy
- Policy Responses to Climate Change (e.g., CBAM)

C. Geopolitics

- Geopolitical Fragmentation. Bi-polar world with “bystander” countries?

III. Implications of Changes for Development

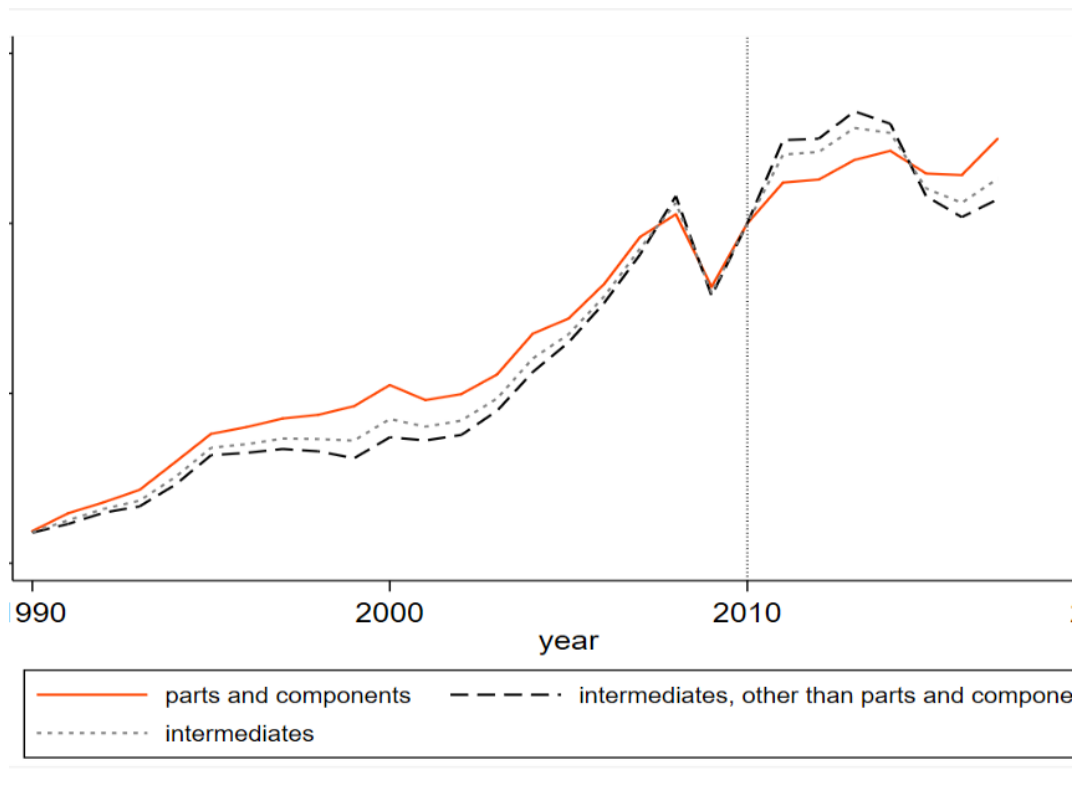
- Will discuss each change and its effects on development
- Preview of main takeaway of the analysis:
 - Structural changes pose challenges for export-led growth and development.
 - But so far changes have not been dramatic. However, they imply that we are in a race against time re. development.
 - Policy changes *in advanced economies* have been dramatic.
 - To date, geopolitics leave room for development in “bystander” countries. But such countries are at the mercy of the US and China

On Structural Changes

Has Production Fragmentation Run its Course?

- No compelling evidence that it has

World Exports of Parts and Components vs. Other Intermediate Goods



On Structural Changes (contd.)

Automation, Digitalization, AI:

→ Reshoring

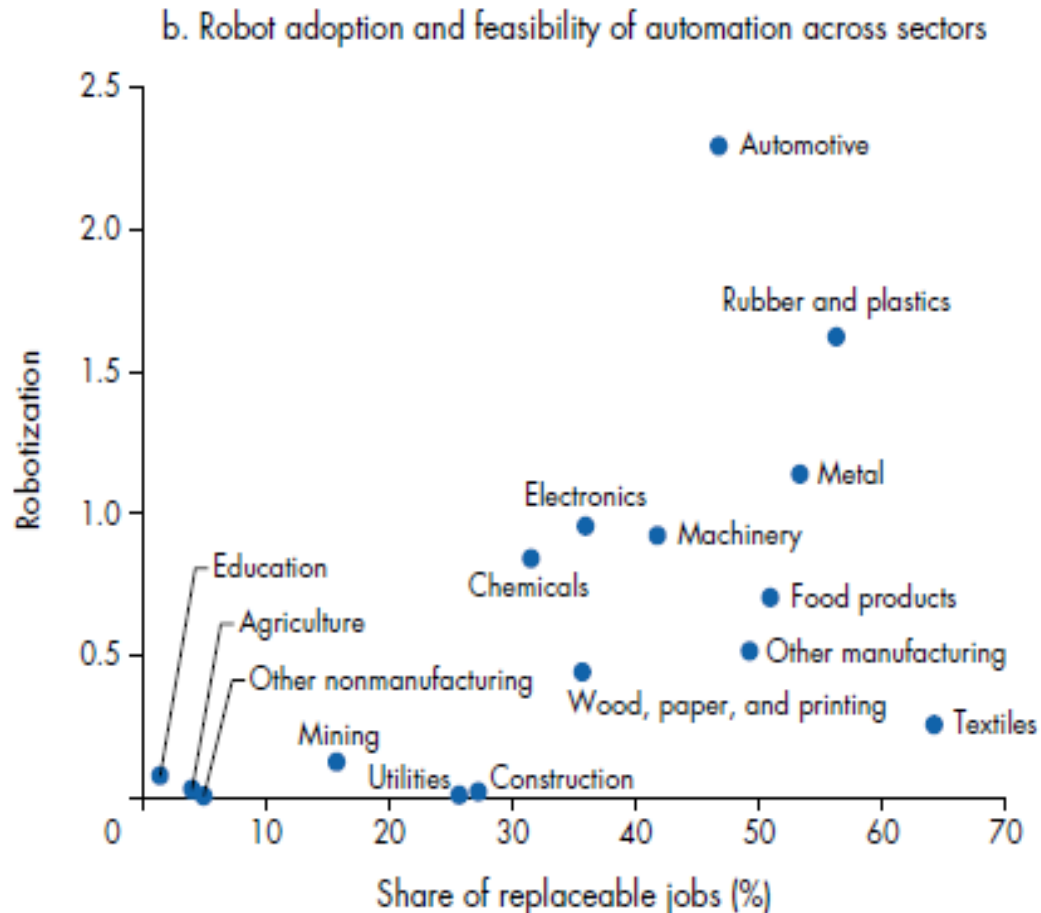
→ Trade in Services

Automation, Trade, and Development

- Automation: Major source of anxiety re. future of development.
- Intuition: Robots render advantage of LICs in low-skill MF irrelevant.
- However, evidence to date mixed.

Automation, Trade, and Development (contd.)

From the WDR 2020, p. 147



Original Source: Artuc, Bastos, and Rijkers 2018. Robotization is the logarithm of 1 plus the ratio of the average stock of robots to the number of working hours (in millions) between 1993 and 2015 (or the subsample of years over this period for which robot data from the International Federation of Robotics [IFR] are available). The stock of robots is estimated using the perpetual inventory method based on the observed stock of robots in the IFR data and using a depreciation rate of 10 percent.

Automation, Trade, and Development (contd.)

- Two effects:
 - Labor Displacement Effect: implies less need for cheap labor from LICs
 - Productivity and Scale Effects: imply higher demand for intermediate inputs (some of which are sourced from LICs).
- Which effect dominates is an empirical question. Dependent on context
- Different studies produce different findings re. effect of automation on exports by LICs.

Automation, Trade, and Development (contd.)

The mixed evidence:

- On one hand:
 - Artuc, Bastos and Rijkers 2018: Automation increases intermediate input imports from developing countries
 - Stapleton and Webb 2020: Positive effects of robots on imports from developing countries in Spain
- On the other hand:
 - High profile examples: Adidas “speedfactories” in Germany and the US
 - Faber 2020 & Artuc, Christaensen and Winkler 2019: Automation decreases exports from Mexico to the US
 - Faber et al 2023: Automation leads to reshoring but ONLY in interaction with risk in developing countries
 - Carbonero et al, DeBacker et al, and Krenz et al 2018: Robots decrease rate of offshoring
 - Stemmler 2019: Automation reduces exports of final products in Brazil
- In the middle: Freund, Mulabdic and Ruta, JIE 2022:
 - 3D printing increased exports in hearing aids by 80% (so, no evidence of reshoring)
 - Similar effects for 35 other products relying on 3D printing, but smaller in magnitude
 - However: Evidence of shifting CA from labor-abundant countries to countries that had adopted 3D

Consensus that automation will change demand for skills: Less demand for production workers, potentially higher demand for non-production workers.

Digitization, Trade and Development

Internet, big data, blockchain, cloud computing, AI, digital platform firms

- Can have transformative direct effects on development (e.g., Hjort and Paulsen, AER 2019)

- Effects through Trade
 - Decline of search, communications costs and logistics
 - Speeds up Trade Facilitation efforts
 - Facilitates e-commerce and digital platforms

Digitization, Trade and Development (contd.)

Effects on Trade (contd.):

- Perhaps most important effect: Potential to make many more services tradeable (can be provided remotely)
- Hence the question: Can tradeable services become the new engine of growth?

Digitization, Trade and Development (contd.)

Digitization and Trade in Services

Can Tradeable Services become the new engine of growth?

Relevant Questions:

1. Do recent technological advancements (i.e., digitization) make services more tradeable?
2. Do tradeable services have the same positive spillovers as MF?

Digitization, Trade and Development (contd.)

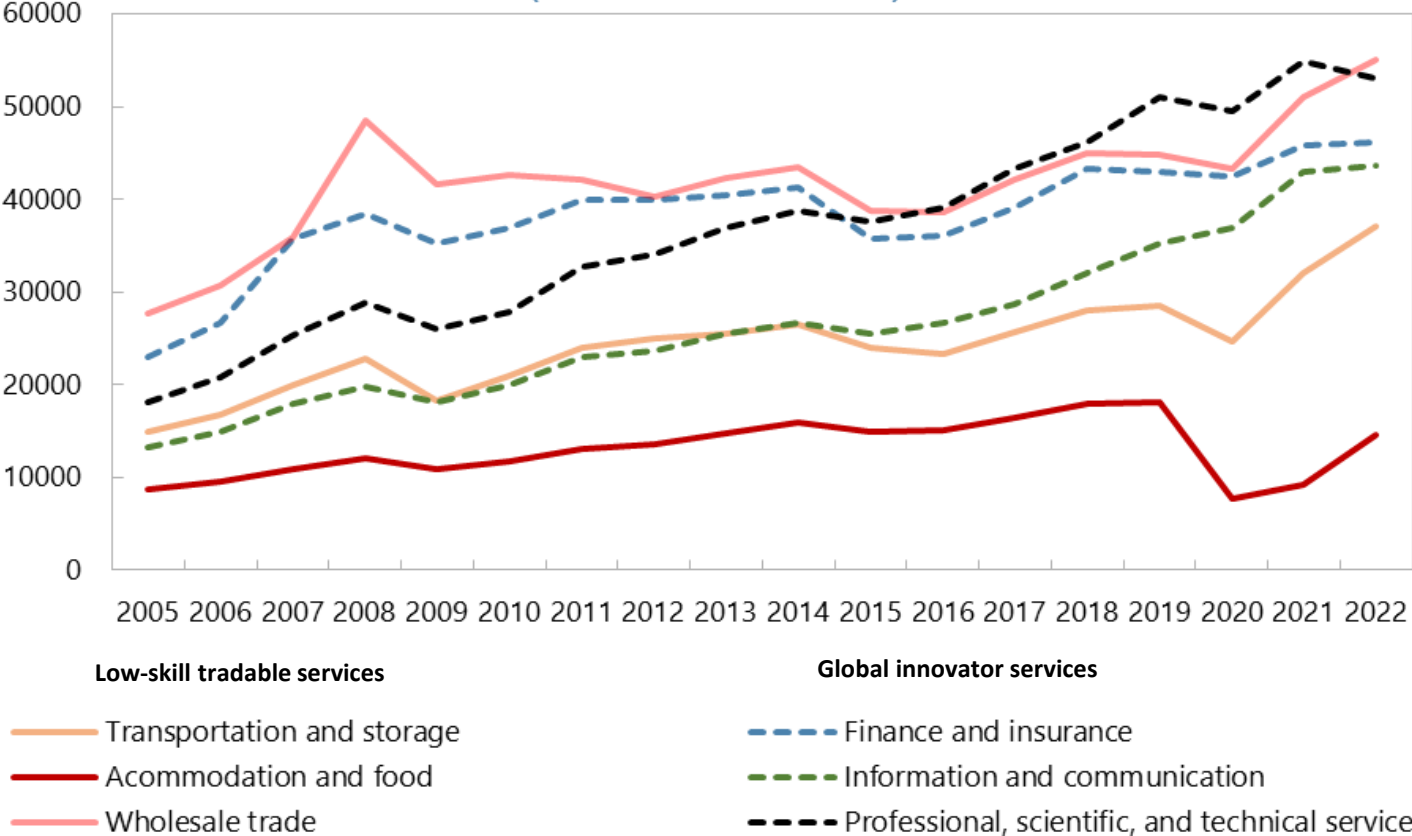
Question 1: Technology → Tradeability of Services?

Answer: YES

- Substantial growth in service trade in recent decades fueled by technology (and trade policy) (see next slide)
- Growth particularly strong in “Professional, Scientific and Technical” and “Information and Communication”. Robust during COVID pandemic. But high-skill intensive.
- However, automation also affects services (AI can replace many services)
- Despite threat by automation/AI, potential to grow given current level

Growth in Services Trade

Growth in Global Trade in Services (million US dollars)



Source: WTO Trade in Services by Mode of Supply (TISMOS).

Digitization, Trade and Development (contd.)

Question 2: Tradeable Services → Economy-side Productivity/Spillovers?

- Open question: Has not happened yet. But there is no reason it could not
- However not all tradeable services have positive spillover effects (see tourism, Faber and Gaubert, AER 2019)
- But some do. Hence, second open question: Which services do have positive spillover effects?
 - Business, IT services? Share some features with GVCs (e.g., require close collaboration between parties; sharing of technology)
 - But sector too small. Can the tail wag the dog?
 - Perhaps. If it leads to changes in work norms, institutions. But untested
- Additional challenge: Services with positive spillover effects more skill-intensive (e.g., foreign languages; computer literacy; soft skills).

Answer to second question: Maybe

At a minimum, would require investments by LICs in basic skills.

On Structural Changes (contd.)

Climate Change

- Climate Change (not Policy!) affects agricultural production and tourism and hence patterns of static comparative advantage. True?

- Climate Change leads to natural disasters which:
 - Are big negative income shocks for the affected economies
 - Destroy important infrastructure (e.g., single port, single road).
 - Disrupt GVCs → may lead to relocation of production activities

On Structural Changes (contd.)

Climate Change and Comparative Advantage (presumed strong relation)

- Conceptual point: Climate change can have severe effects on AG or tourism without affecting static CA.
- Only paper that has looked at this question explicitly is Costinot, Donaldson and Smith (JPE 2016). Findings:
 - Large & heterogeneous effects of projected (by GAEZ) climate change on AG productivity and yields.
 - Welfare effects of projected climate change small on average (-0.26% of World GDP).
 - But very large for select countries (e.g., Malawi: -49% of GDP).
 - IMPORTANTLY: Production reallocation within a country important in mitigating losses. But reallocation of trade flows negligible.

On Structural Changes (contd.)

Climate Change, Disruptions, and GVCs

- Substantial evidence that natural disasters caused by climate change affect LICs more
- Cause disruptions of GVCs
- Potentially more grave concern: In the long run → incentive to relocate GVC activity away from vulnerable countries
 - BUT: No evidence that this is happening – YET!
 - Many vulnerable countries have not participated in GVCs (example: Haiti).
 - Interaction of Climate Change risk with automation (Faber et al, WP 2023)

On Policy Changes and Geopolitics

- Initially disputed. By now, widely accepted that we have entered a new era.
 - Reed and Goldberg (*Brookings* 2023): “*Is the Global Economy Deglobalizing?...*”
- In practice hard to distinguish between policies motivated by domestic economy concerns vs. geopolitics.
 - Examples: EVs, Semiconductors: Valid concerns about resilience and diversification away from geopolitically sensitive suppliers. But additional objective: “Good Jobs” for domestic labor
- Effects highly uncertain at this point. But will depend on whether major economies pursue “reshoring” vs. “friendshoring” or “decoupling”.

Recent Policy Reversals

- Undermining of multilateralism by the US. WTO Appellate Body crisis.
- US-China Trade tensions
 - Tariff War
 - US export restrictions in the semiconductor sector
- Industrial Policy in advanced economies
- Climate Change Policies, incl. CBAM
- Increasing Geopolitical Fragmentation
 - Decoupling of Europe from Russia
 - Decoupling of US from China
 - Two-polar world economy

Effects on Development???

- NOTE: Policy reversals very recent. Several of them after 2022 (e.g., IP)
- Short- vs. Long-Run
- In the short-run, some evidence on effects on trade flows (evidence related primarily to US-China trade war)
- But long-run effects on development have to be judged based on first principles and extrapolations from past experience
 - What do the recent changes imply for the mechanisms that have contributed to development in the past?

Short-run effects on trade flows

- Some developing countries euphoric about US-China trade tensions → opportunities for “bystander” countries (but others were anxious)
- Results to date support optimism. Many “bystander” or “connector” countries benefited – in terms of exports!
- Fajgelbaum et al (2024): US-China trade war *increased* global exports in targeted products. Almost all bystander countries increased exports not just to the US, but globally.
- Freund, Mattoo and Ruta (2024): US-China trade war led to a sharp decline of US-China trade. But exports of China to bystander countries exporting to the US increased → trade was reallocated. Similar message in Alfaro and Chor (2024).
- Big beneficiaries: Countries well integrated in the world trading system (Vietnam, Mexico).
- IMF (Gopinath et al 2024): Trade between blocs has declined. But trade between “connector” countries and blocs remains robust → big difference to Cold War.

Short-run effects on trade flows (contd.)

Main takeaway from existing work:

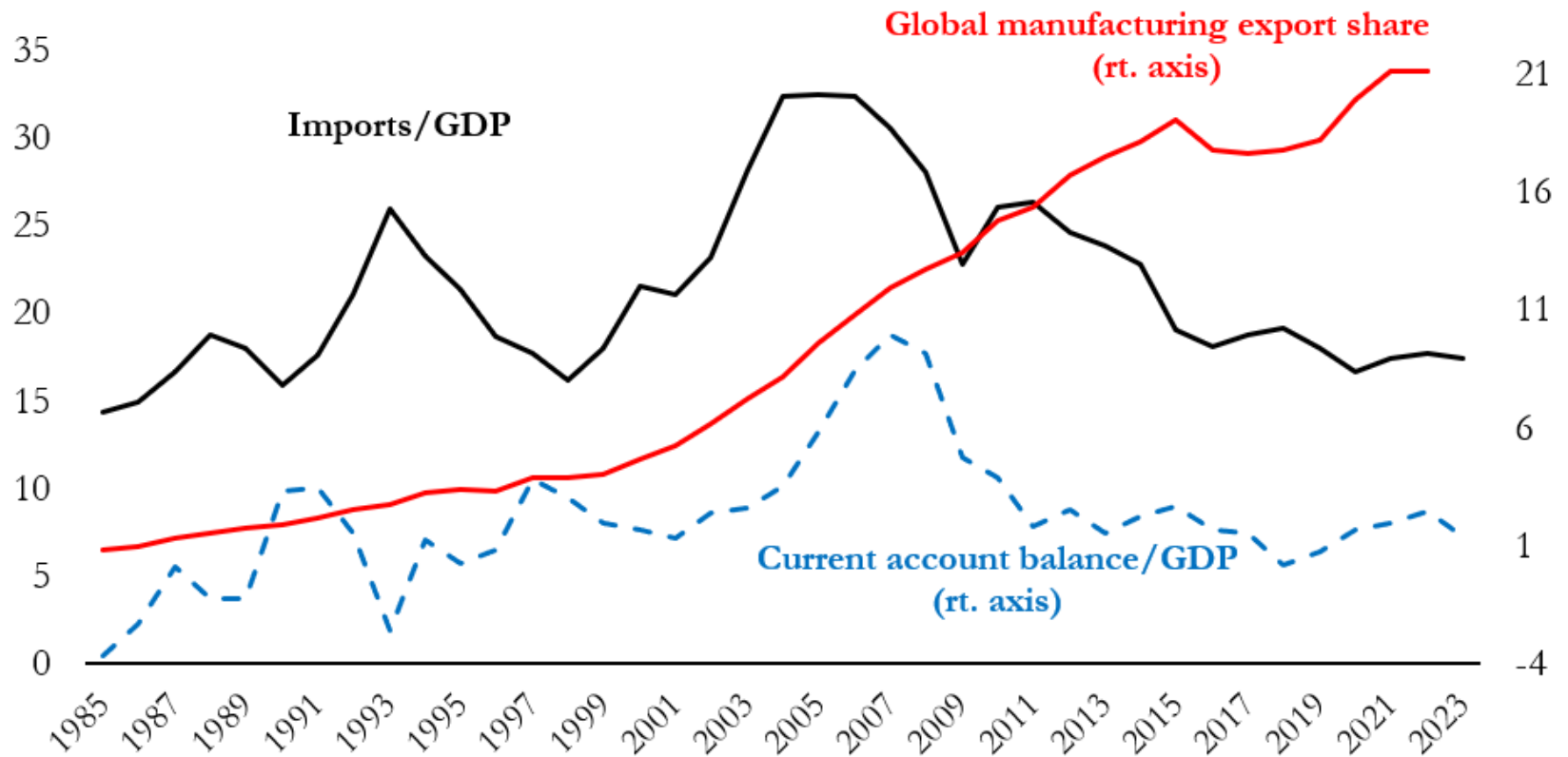
→ Tensions between US and China and geopolitical fragmentation = Good news for many developing countries. Have created export opportunities for many of them.

However, long-run effects on development less clear. Concerns:

Long-run Effects on Development?

- **Market Size:** Access of low-income countries to big lucrative markets highly uncertain
 - Beneficiaries to date have been countries well integrated into the world trading system – mostly MICs, NOT LICs, not Africa
 - The US and Europe unlikely to open their borders to a new surge of imports from LICs (see EVs)
 - Can China take the place of the US and Europe as an export destination? So far, the answer seems to be no:
 - To date, exports of China to ROW robust/increasing. But imports as a ratio to GDP have been declining (see next slide)
 - Fajgelbaum et al: Exports of bystander countries to the US and other countries increased. But NOT to China

Figure: China's Global Competitiveness and Trade, 1985-2022 (percent)



Source: Arvind Subramanian, "The Paradox of China's Globalization," *Project Syndicate*, August 22, 2024.

Long-run Effects on Development? (contd.)

- **Technology/Knowledge Transfer:** Current political climate and industrial policies in the US and Europe make technology sharing unlikely
 - LICs do not have China's past bargaining power to force technology transfer.
 - Stability and predictability required for the flourishing of GVCs gone.
 - Philosophical shift towards viewing trade and welfare as zero-sum games.
 - Focus of industrial policies in the US and Europe on domestic issues, resilience, and national security make knowledge sharing difficult.
 - The above make it more likely that LICs and MICs will be “stuck” in low-value activities.

→ Role of Industrial Policy in advanced countries?

Industrial Policy and Development

- Historically, IP has always been a powerful tool of governments (Juhasz and Steinwender, ARE 2024; Juhasz, Lane and Rodrik, ARE 2024)
- But most advanced countries refrained from heavy use of IP during the age of hyperglobalization.
- This created opportunities for many (once) developing countries.
- Many developing countries employed IP in the near past (China, Taiwan, Korea, etc.). BUT:
- IP was only successful when accompanied by access to foreign technology. This required cooperation with advanced countries
 - Once again, role of GVCs
 - Important role for politics: US support for allies (e.g., S. Korea, Taiwan). Tolerance of Japanese even when their economic interests antagonized those of the US.

Industrial Policy and Development (contd.)

What is different today?

- IP in the US and Europe pursues multiple goals at once. When the goal is protection of domestic interests → collision with interests of other countries
- Note that some of these countries are US allies:
 - Example 1: EVs – effects on Europe and Korea
 - Example 2: Semiconductors. Resilience requires diversifying supply of advanced logic chips. But why Arizona and not Korea or Vietnam or....
 - Example 3: Indonesia, nickel and EVs. Can Indonesia use its nickel endowment as a stepping stone to climb up the EV GVC? Only if the US allows to.
- In principle, IP in advanced countries can be consistent with development IFF it is not focused on promoting domestic industries. “Friendshoring” would imply the same incentives as during the Cold War.

Long-run Effects on Development? (contd.)

- **Institutions:** Behavior of the US and other advanced countries has undermined the very institutions they supposedly support
 - Undermining of international cooperation and multilateralism when these are needed most to address global issues
 - Industrial policy often inconsistent with WTO rules once endorsed by the US
 - Domestic content rules and protectionism inconsistent with the goal of promoting a “green economy”. Example: Tariffs on Chinese EVs, solar panels
 - Problem going forward: in the name of climate change, developing countries will be asked to pay a price the US is not willing to bear
- Many of the policies pursued by advanced countries have set a very bad example for developing countries!

Climate Change Policies, Trade, and Development

On one side:

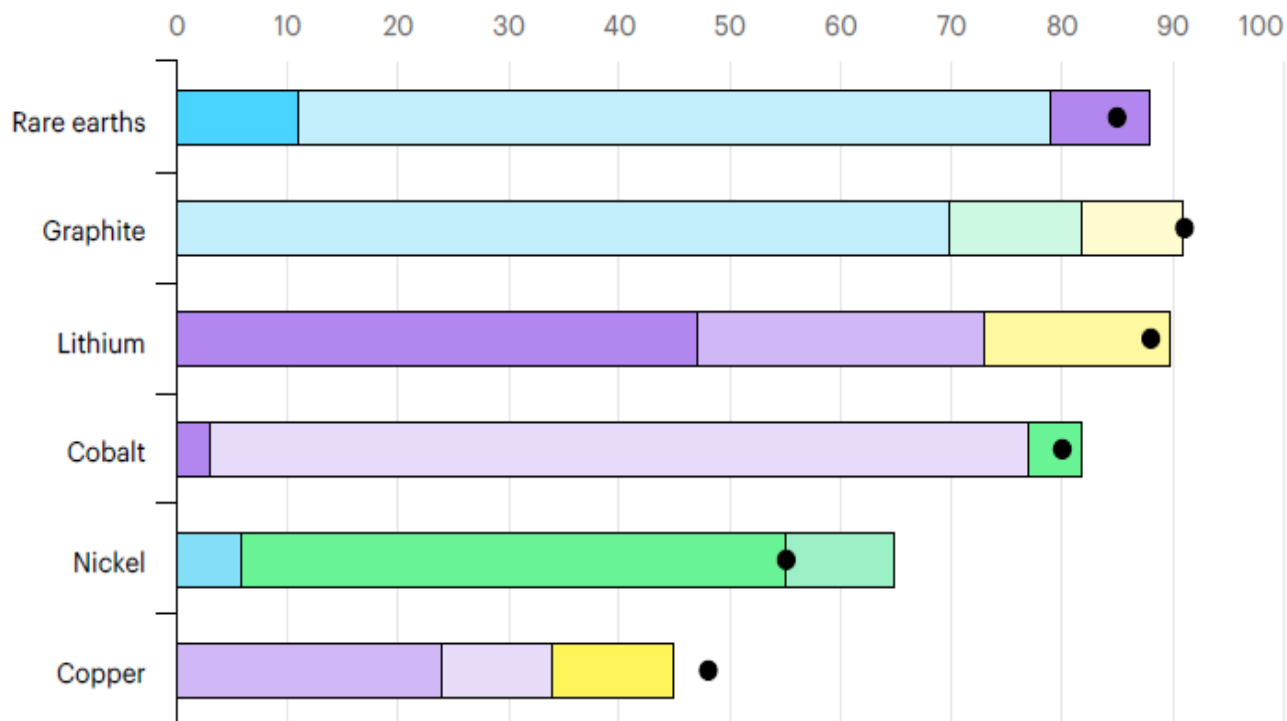
- “Green” agenda reenforces the point that development is not just about growth → more general view of development
- Environmental goals particularly important to developing countries that are most vulnerable to climate change
- The green agenda is changing patterns of comparative advantage, and some of the changes will benefit select developing countries
 - Critical minerals may become the new “oil”
 - But the risk of the “natural resource curse” should not be overlooked
- Some examples follow

Critical Minerals in Sub-Saharan Africa

IMF: “Harnessing Sub-Saharan Africa’s Critical Mineral Wealth”, April 2024:

- **DRC**: over 70% of global cobalt output, and ca. half the world’s reserves
- **South Africa, Gabon, Ghana** : over 60% of world’s manganese production
- **Zimbabwe, DRC, Mali**: unexplored lithium deposits
- Other critical mineral reserves in **Guinea, Mozambique, S. Africa, Zambia**
- IMF estimates: SSA could reap over 10% of future cumulated revenues, which would increase the region’s GDP by 12% or more by 2050

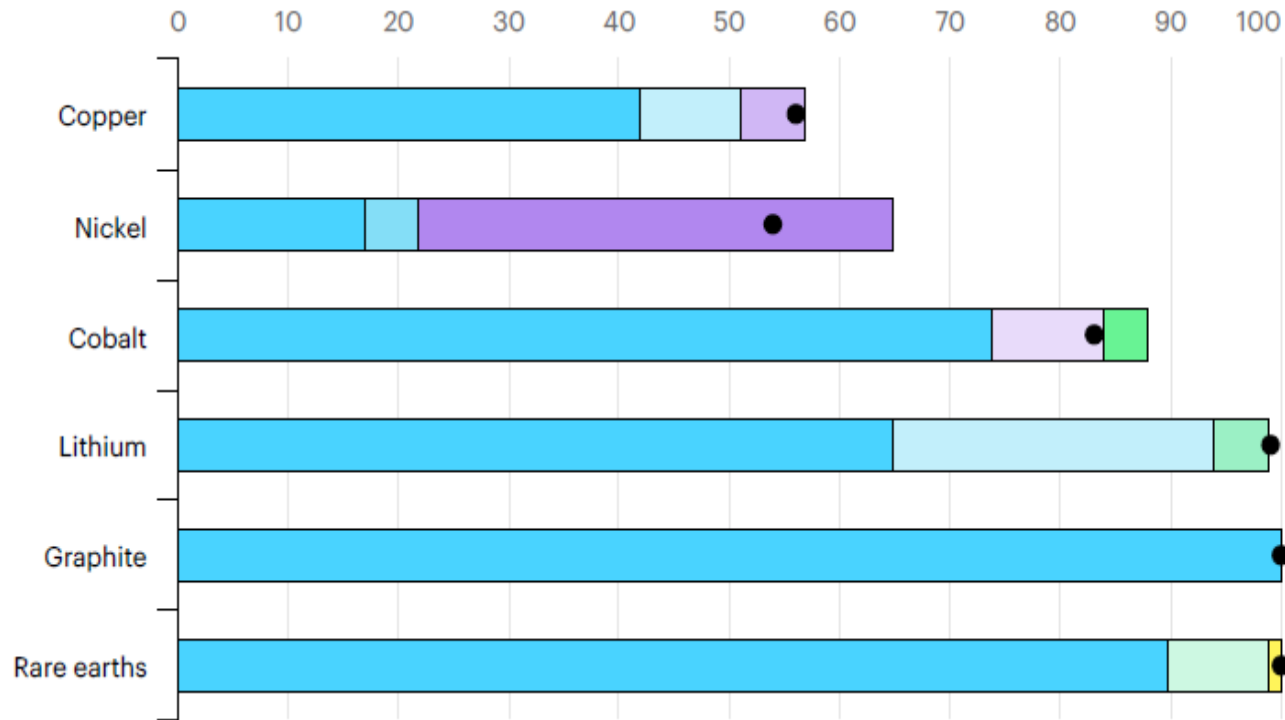
Share of top three producing countries in mining of selected minerals, 2022



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- United States
- Russia
- China
- Australia
- Chile
- Democratic Republic of the Congo
- Indonesia
- Philippines
- Mozambique
- Peru
- China
- Madagascar
- 2019 top 3 share

Share of top three producing countries in processing of selected minerals, 2022



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● China ● Russia ● Chile ● Indonesia ● Japan ● Finland ● Canada ● Argentina
● Malaysia ● Estonia ● 2019 top 3 share

Climate Change Policies, Trade, and Development (contd.)

On the other side:

- Green transition will be expensive for developing countries (esp. for those with rich coal deposits, e.g., India, South Africa)
- Depending on implementation, specific climate change policies can further reduce opportunities for export-led growth
 - Climate Clubs
 - CBAM
- WB: [CBAM Exposure Index](#) based on current CBAM plan of EU (Maliszweska et al, World Bank Blog, 2023).

CBAM and International Competitiveness

Based on Aggregate Relative CBAM Exposure Index, most exposed countries:

Zimbabwe; most exposed products: Iron and Steel

Mozambique; most exposed product: Aluminum

Egypt; most exposed product: Fertilizer

Cameroon; most exposed product: Aluminum

South Africa; most exposed products: Iron and Steel

India; most exposed products: Iron and Steel

Kazakhstan; most exposed product: Aluminum

Ukraine, Belarus; most exposed product: Cement

→ CBAM (and other climate change policies related to trade) will likely make the first step in development process tougher for most developing countries

Geopolitical Fragmentation and Development

- Return to Cold War, this time between the US and China
- A new “Cold War” does not need to be a dealbreaker for development (see experience from earlier Cold War)
- But growth and development will not be as fast as during the age of “hyperglobalization”. Still, slower growth possible – as long as the big powers support their allies and members of their respective blocs.
- Biggest risk: Peace and stability can no longer be taken for granted. Already various proxy wars. Future is highly uncertain.
- Conflict and uncertainty not conducive to the long-run investments in technology and institutions that spur development.

IV. Conclusions

- Took stock of the current situation and discuss challenges for development.
- Realistic assessment: The growth miracles of the past unlikely to repeat themselves. Growth and development still possible, but at a lower pace.
- Trade/Globalization has played an important role in the past. Could still play a significant role in the future, but unlikely.
- Constraints are (geo)political rather than technological.
 - Regional or bilateral alliances may prove crucial, but countries will need to choose their “friends” wisely.

THANK YOU!