

Global Environment for Global Growth

Kalina Manova, UCL

OECD GFP 2023

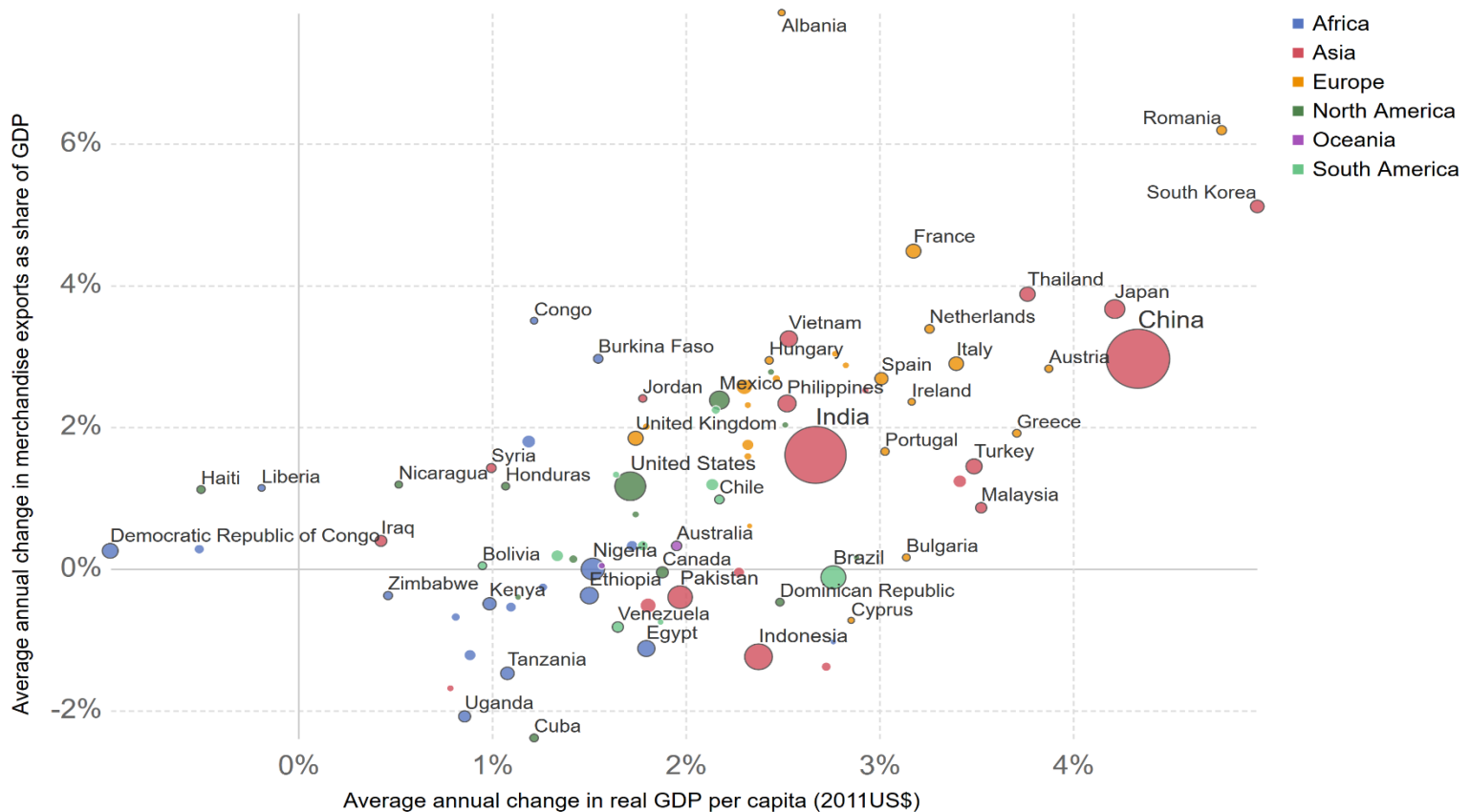


20thc. Globalization & Growth

Growth of income and trade, 1945 to 2014

Average annual change in real GDP per capita vs Average annual change in export volumes.

Our World
in Data

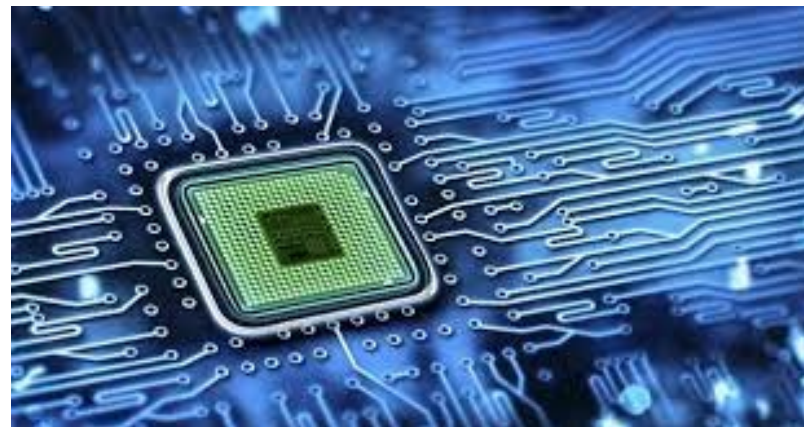


Source: Fouquin and Hugot (CEPII 2016), Maddison Project Database (2018), Population (Gapminder, HYDE(2016) & UN (2019))

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21st c. Globalization & Growth

- Technological change & trade policy have transformed international trade & investment
 - Rise of global value chains and multinational activity
 - Deeper financial and labor market integration
- Greater interconnectedness & interdependence
- Intensified policy debates
- Global integration & cooperation under fire



Global Environment for Global Growth

What global growth do we want? What global conditions foster it?

- ❑ Globalization for growth
 - Complexity: networks, local & multinational firms, production & innovation
 - Triptych: export access, import competition, global sourcing
 - Opportunities: lower input costs, greater market access, more tech upgrading
 - Challenges: firm (in)capacity, market frictions, weak institutions

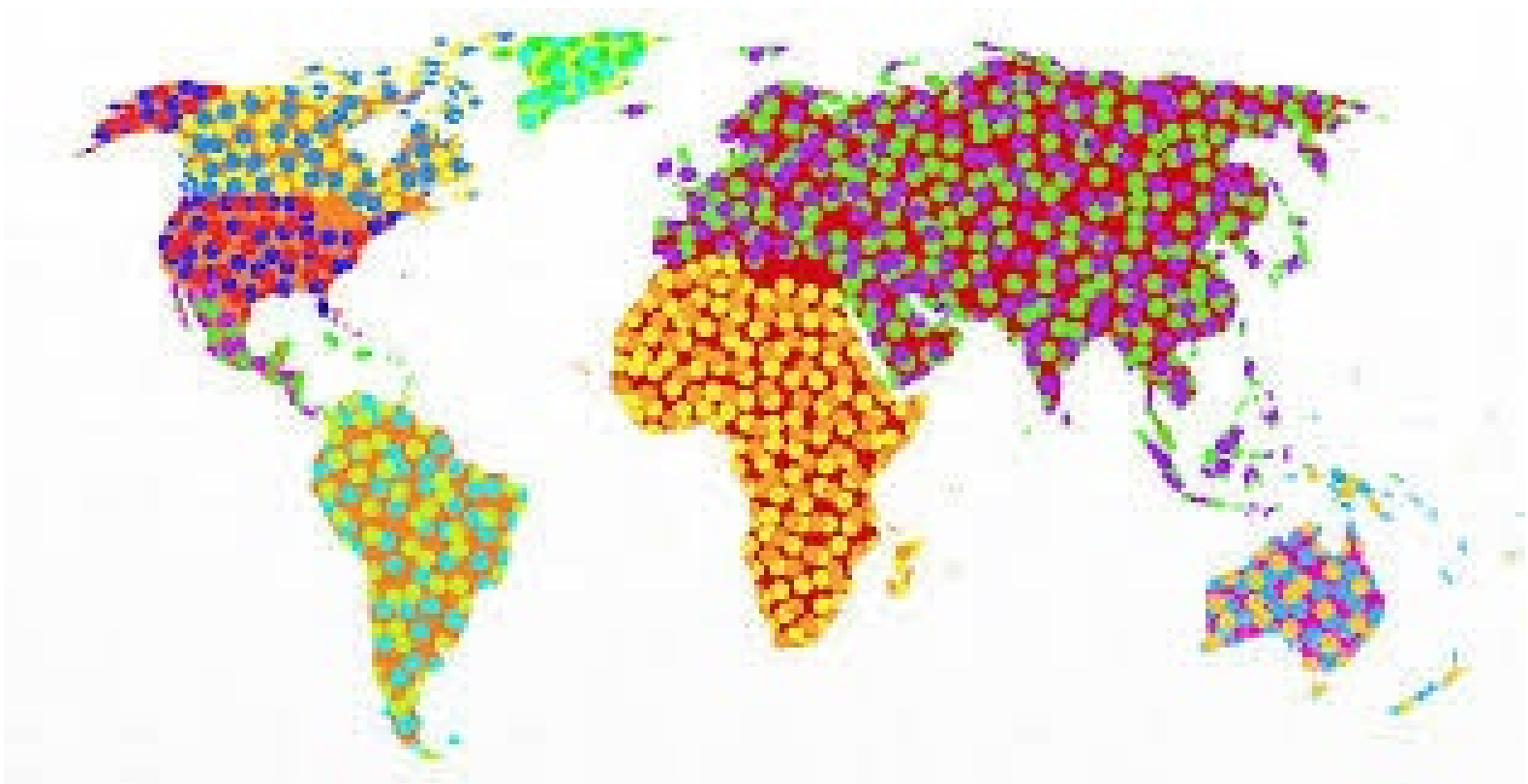
- ❑ Globalization for growth+++
 - Inclusivity
 - Resilience
 - Sustainability

- ❑ Multilateralism of & for the future
 - Global goals, global challenges, global effort

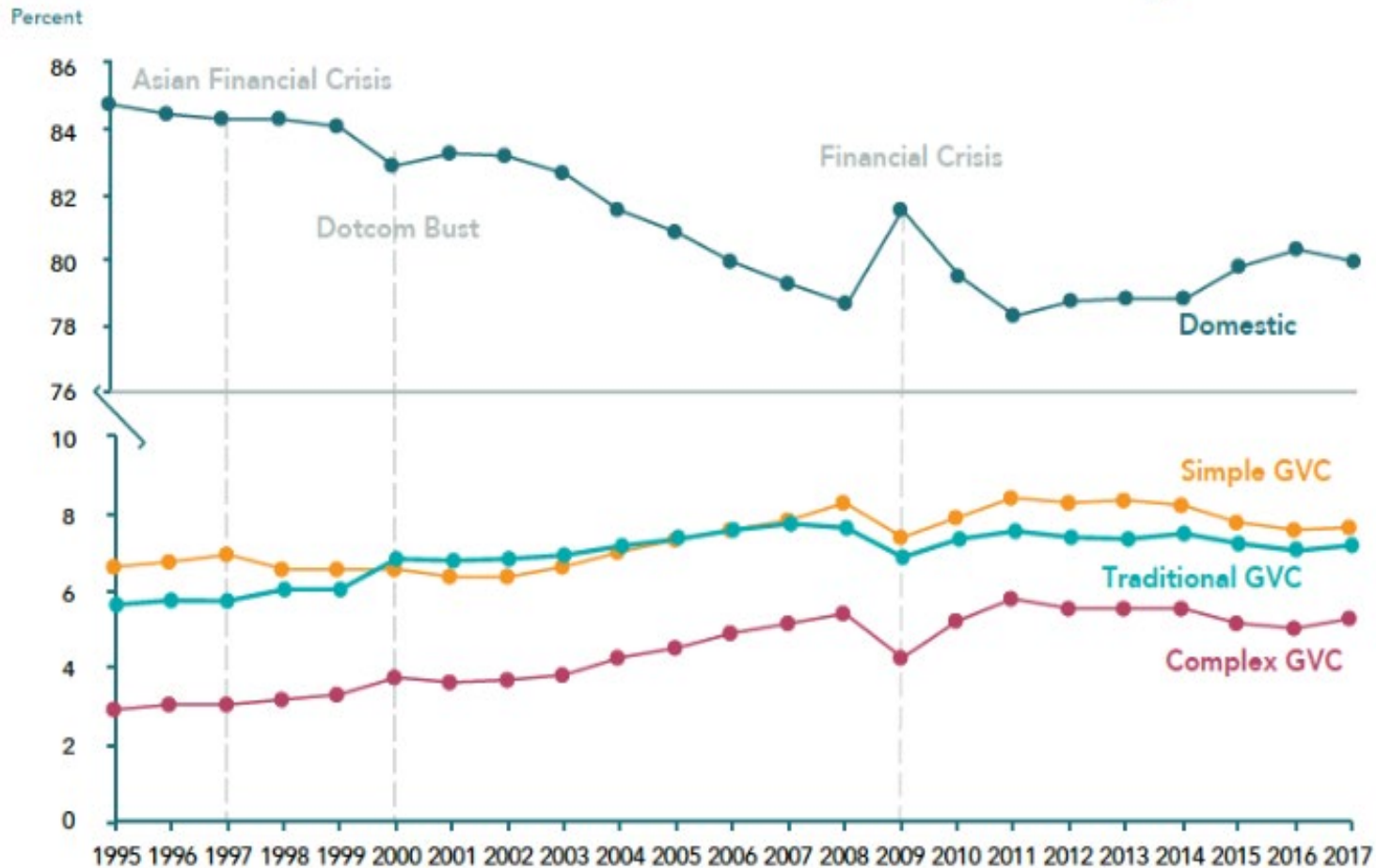


Pointillism

insights about the WORLD from research anecDOTes



Wider & Deeper Global Value Chains



Source: WTO

Global Production Network Complexity

- ❑ 70-80% trade in intermediates, 70-80% trade by MNCs
 - >60 mil workers in 3,500 processing zones in 130 countries
 - Sparse, multi-stage networks with huge buyer & seller heterogeneity
 - Costly search, match, financing & contracting across jurisdictions

20thc. GVC classic



21stc. GVC classic





Globalization for Growth

- ❑ Global production fragmentation can put firms on steeper growth path
 - Improve performance given current productivity
 - Improve productivity through technological upgrading

- ❑ Competitiveness and profitability depend on own productivity, input costs and output quality
 - More/better/cheaper (imported) inputs/equipment → ↓ costs, ↑ quality
 - (Export) market access & (import) competition → ↑ innovation & adoption
 - Active knowledge transfer & passive spillovers → ↑ production know-how, ↑ management practices, ↑ market expertise, ↑ innovation
 - Production fragmentation → shift in GVC position, task complexity, worker skill, innovation organization



What Challenges Global Trade & Growth?

- ❑ To capitalize on GVC opportunities for growth, firms need information, capability, and cost/benefit incentives
 - Knowledge of GVC and technology frontier
 - Capability to participate in GVCs and innovate/upgrade
 - Costs of matching/transacting, inputs/production, sales/distribution, innovation
 - Benefits of competitiveness, market access, innovation returns

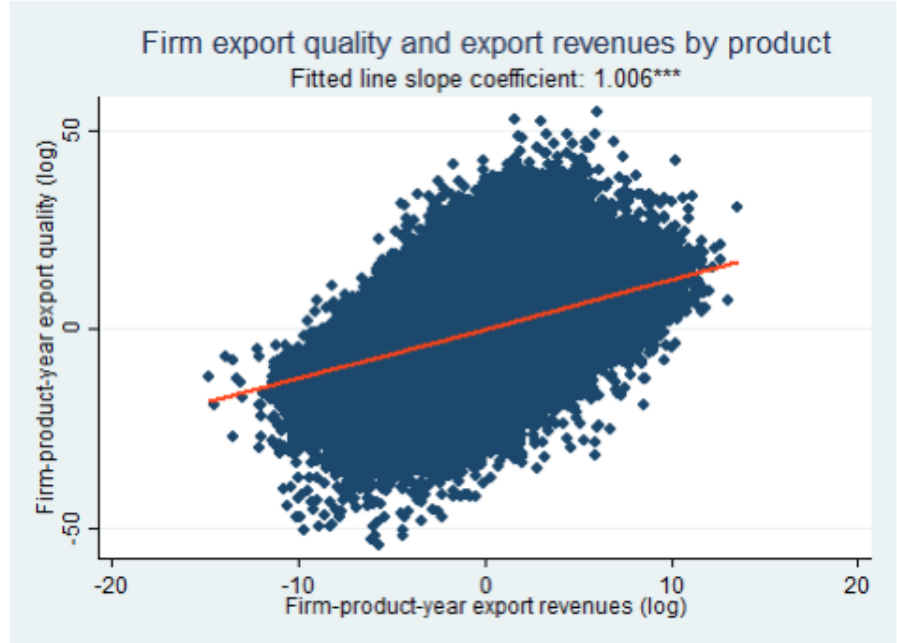
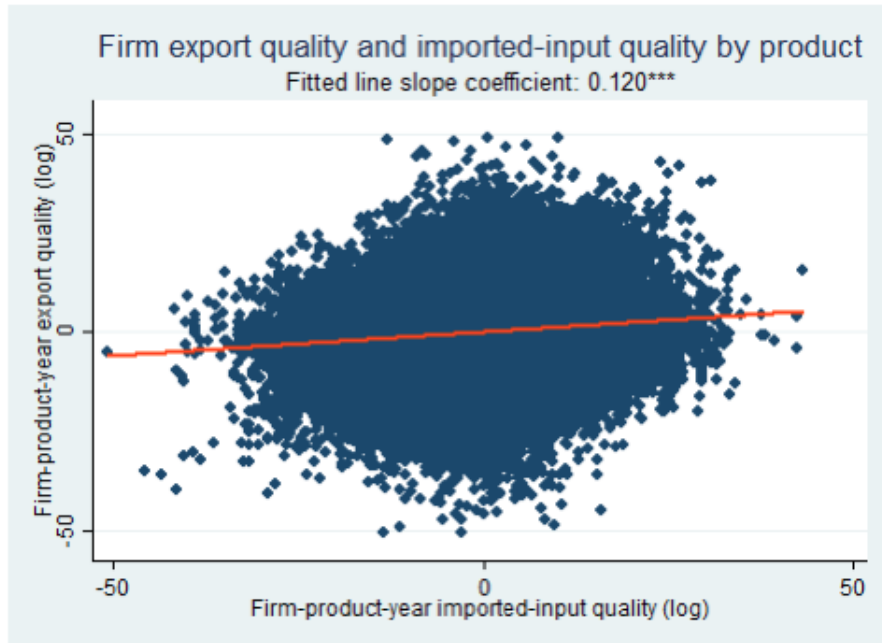
- ➔ Firm prerequisites
 - Knowhow, managerial competence, production efficiency, scale

- ➔ Market & institutional prerequisites
 - Efficient capital, labor, product markets
 - Effective information, contracting & enforcement
 - Enabling logistics & transportation services



Efficiency & Quality Drive Performance

- Manova & Zhang (2012), Manova & Yu (2017): China
 - Successful exporters import high-quality inputs to produce high-quality goods
 - Multi-product firms follow a product quality ladder & vary quality across markets





Capital Trifecta: Financial-Physical-Human

- ❑ Limited access to credit and equipment are not the only barriers to technology adoption and implementation in developing countries
 - World Bank: limited know-how key bottleneck
 - China in Africa: collapse of textile industry once Chinese-managed plants divested after MFA quotas lifted

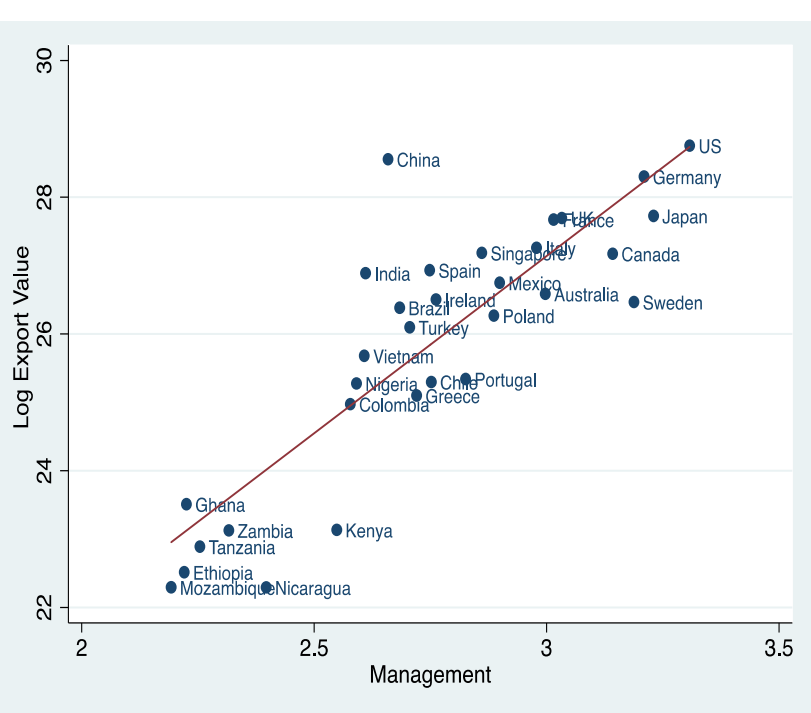
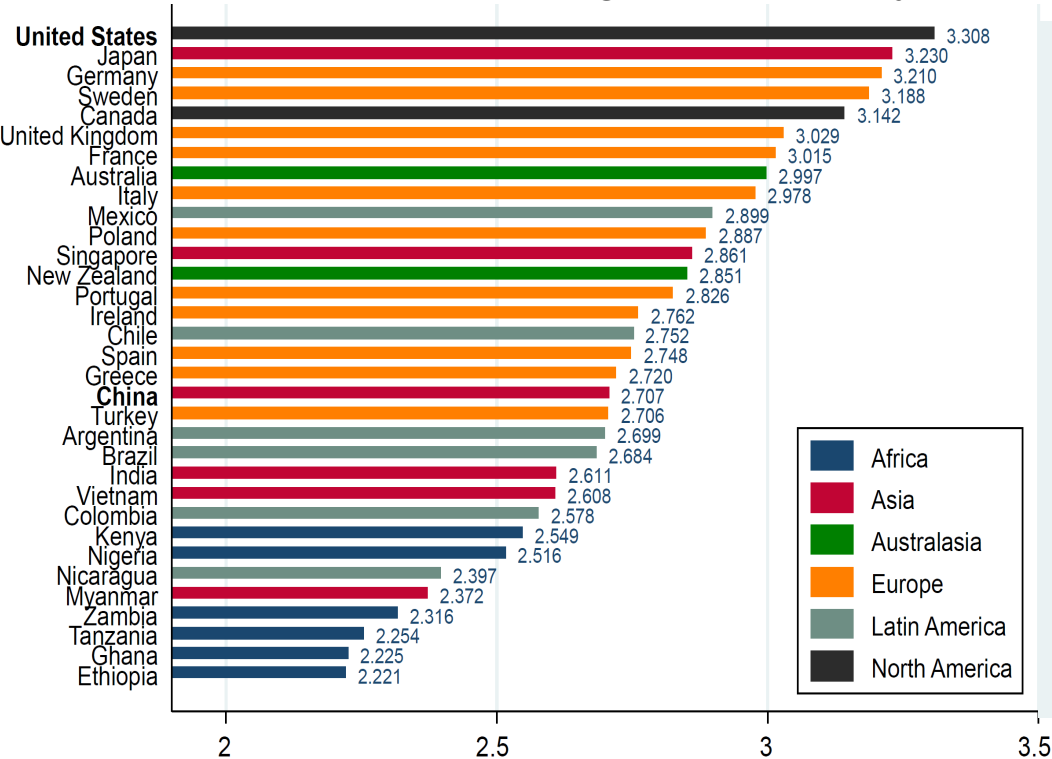
- ❑ Why?
 - Harrigan et al (2021): techies raise skill-biased productivity, ICT techies raise Hicks productivity
 - Atkin et al (2017): weak & wrong incentives limit technology upgrading
 - Betrand & Schoar (2003), Jenter et al (2018): managers & CEO deaths shape firm operations and performance



Management Practices Matter

- Bloom, VanReenan, Manova, Sun & Yu (2021): China & US, India
 - Better-managed firms use higher-quality inputs and more complex technology to produce higher-quality goods more efficiently for superior export performance

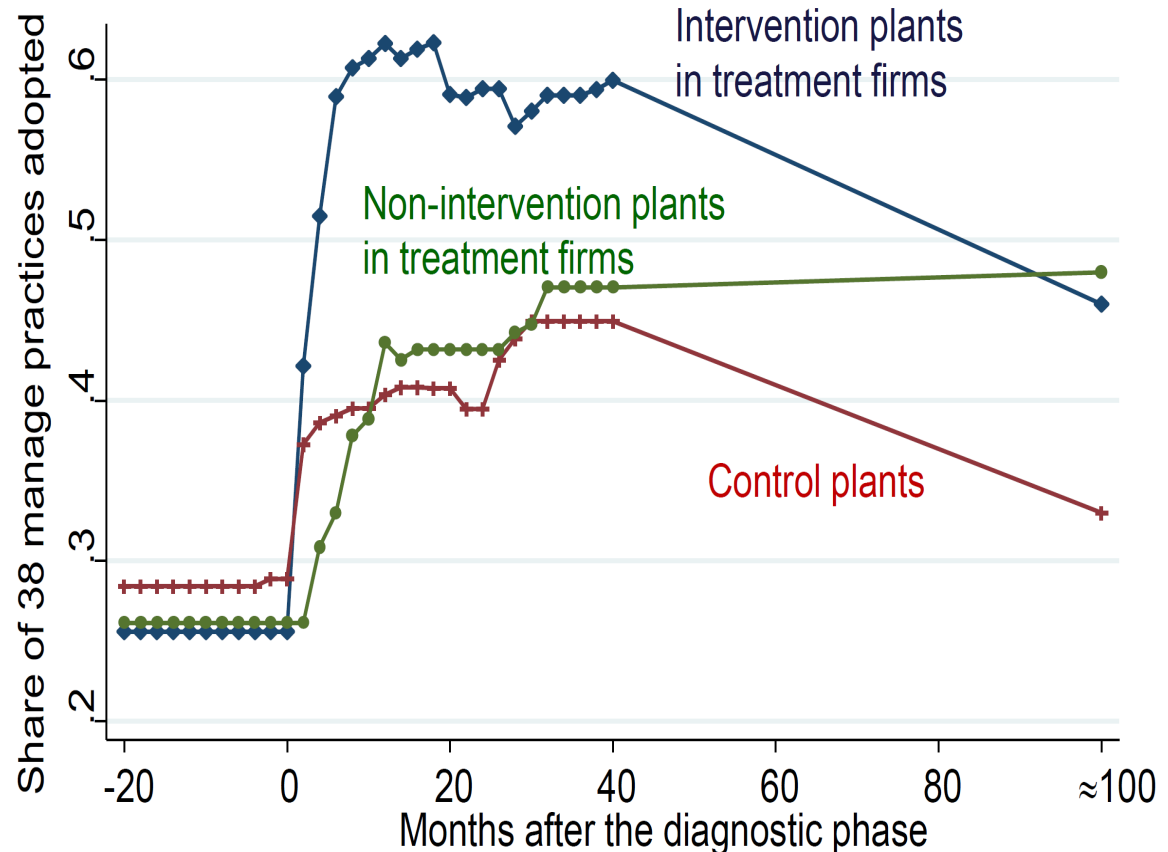
World Management Survey scores & exports across countries





Management Interventions Work

- Bloom, VanReenen, Manova, Sun & Yu (2021): India
- Management intervention had lasting effects on management, quality control and exports ...
- in intervention & non-intervention plants in treated firms ...
- and short-term spillovers to control firms





Production fragmentation enhances scope & incentives for technology change

- ❑ Bernard, Dhyne, Magerman, Manova & Moxnes (2022): Belgium
 - Domestic production fragmentation lowers input costs & raises profits, with larger firms transacting bigger values, with more buyers & suppliers
 - ➔ Production networks explain vast share of firm size dispersion

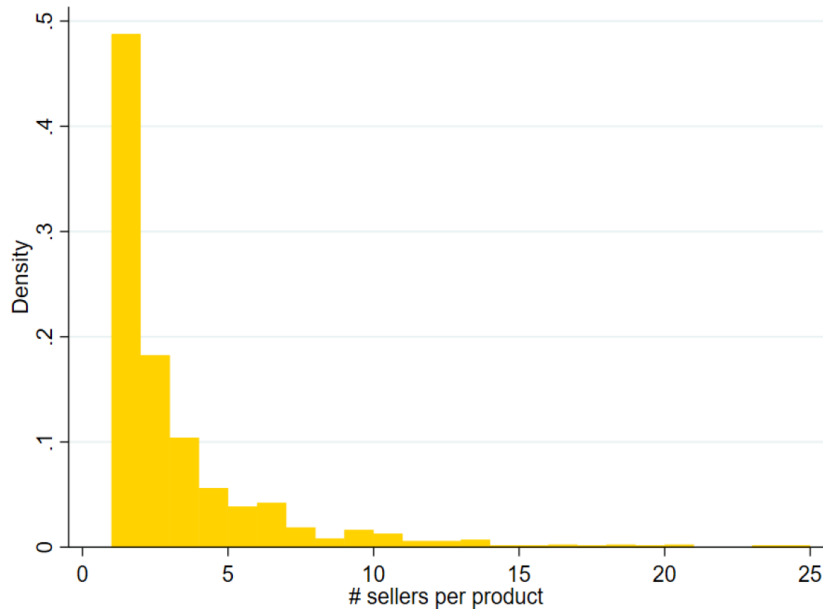
- ❑ Bakker, Dyevre, Manova, Moxnes & De Paula (in progress): Brazil
 - Production fragmentation changes task complexity & employment structure inside firms, enabling reorganization & efficiency gains
 - ➔ Production networks can influence wage distribution & labor share

- ❑ Chor, Manova & Yu (JIE 2021): China
 - Firms expand into more production stages and earn higher profits as they grow bigger, more productive and more experienced
 - ➔ Product transitions & firm dynamics may differ in developed countries

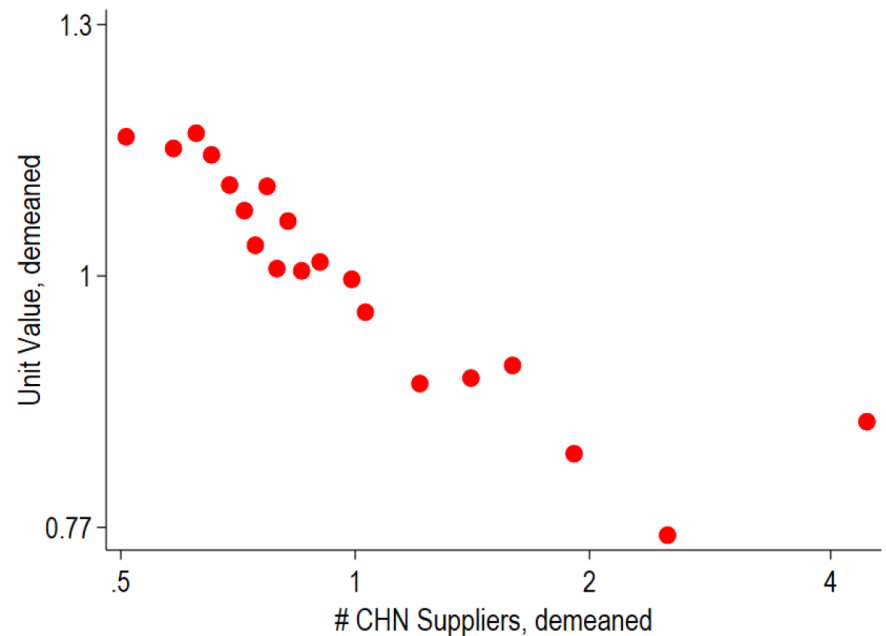


Market Competition Matters

- Huang, Manova, Perello & Pisch (2021): China, Chile, France
 - Upstream competition lowers input prices, improves downstream performance & profits, and raises consumer welfare
 - ➔ National market regulation & industrial policy has international spillovers



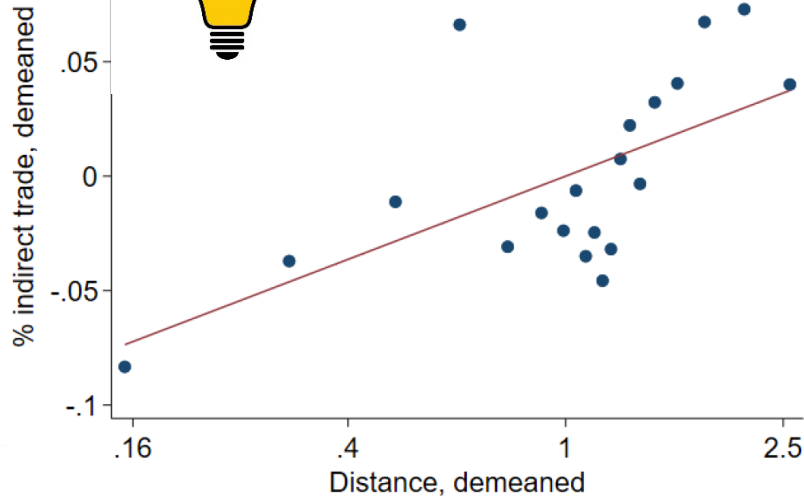
(a) CHN sellers to CHL



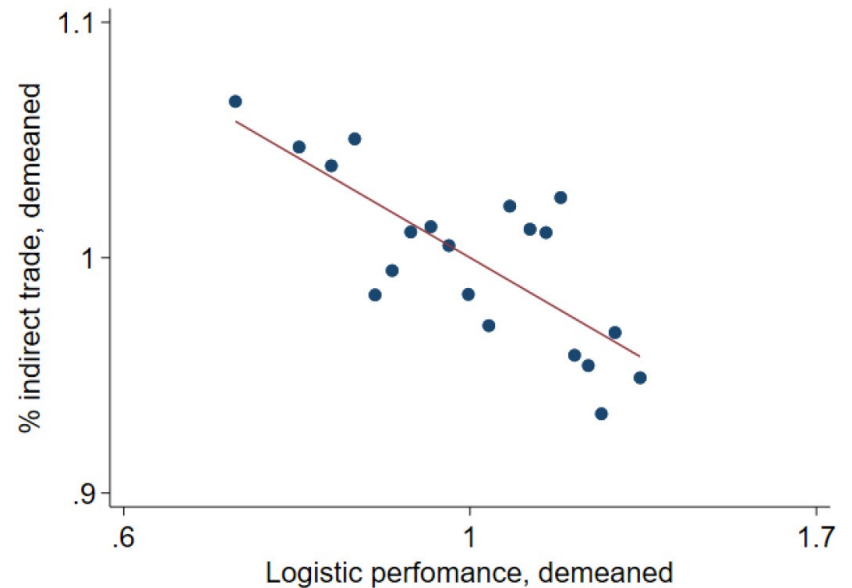
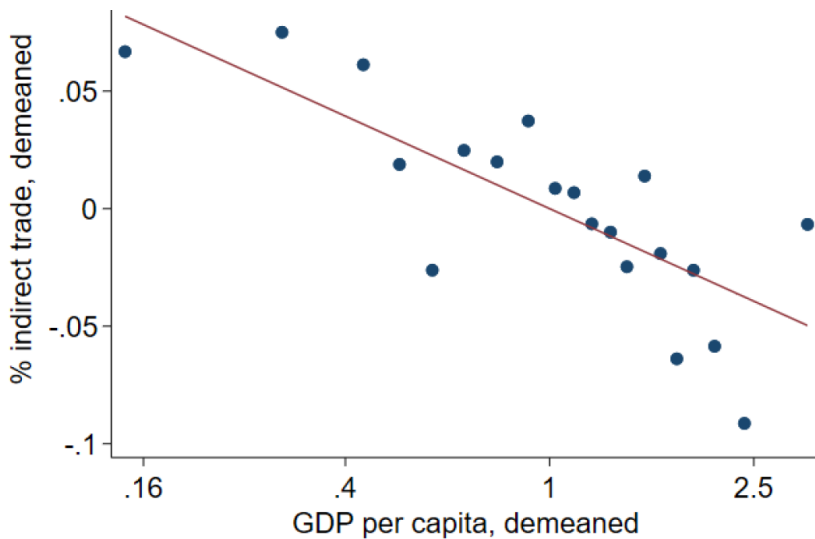
(b) Input price across CHL buyers



Market Makers Matter



- Manova, Moxnes & Perello (new): Chile
- Trade intermediaries widen & deepen production networks to benefit buyers, suppliers, consumers
- ➔ Intermediaries help firms overcome search, match & transaction costs





Institutions Matter

- ❑ Aghion, Angeletos, Banerjee & Manova (2010): OECD
 - Share of long-term investment is counter-cyclical under perfect credit markets, but more procyclical under tighter credit constraints
 - Financially less developed countries have lower growth & higher volatility

- ❑ Berthou, Chung, Manova & Pisch (2018): EU
 - Theoretically ambiguous impact of trade on aggregate welfare & productivity under resource misallocation across firms & sectors
 - In practice, strong rule of law & efficient capital, labor & product markets dampen (amplify) aggregate productivity gains from exporting (importing)

- ➔ Interactions among trade / investment / monetary policy & structural reforms complicate optimal packaging & timing



No Finance, No Trade

- ❑ All firms rely on external capital for upfront costs that cannot be financed out of retained earnings or cash flows from operations
- ❑ Exporters are more dependent on external finance than domestic producers
 - Additional up-front costs, 30-90 days longer processing, greater transaction risk
- ❑ Dramatic variation in financial institutions & financial market development across countries and in financial dependence across sectors
- ➔ Active market for trade financing & insurance, worth \$10-\$12 trillion in 2008 or 90% of world trade
- ➔ Resurgence of WTO, IFC, BIS, Berne Union concern about trade finance gap



Finance → Trade, GVC & MNC

- ❑ Financial frictions severely impede aggregate trade & GVCs
 - Manova (2013), Manova & Yu (2016), Chor & Manova (2012)
 - Limited firm export entry, export volumes & value-chain position
 - Effects concentrated on smaller firms & financially sensitive sectors
 - Trade effects far exceed output distortions & acute during financial crises

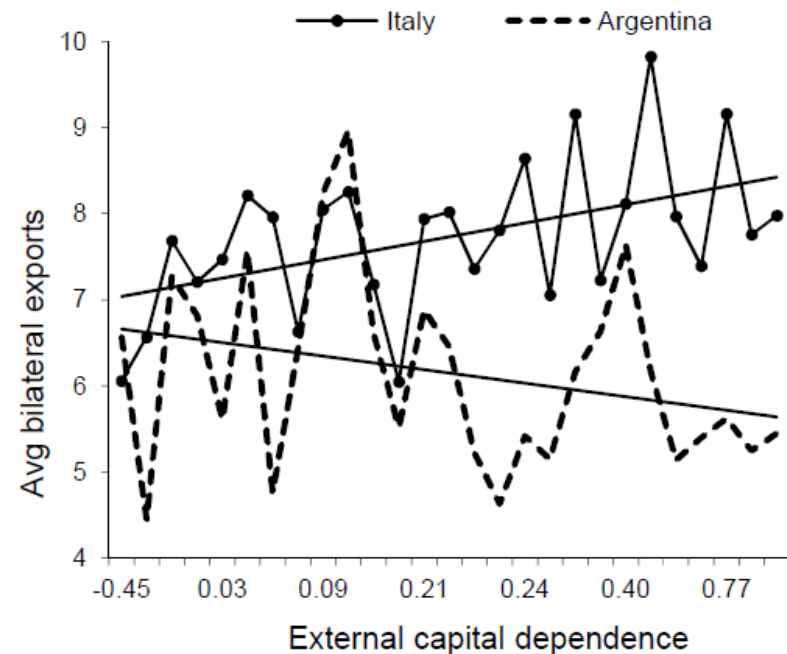
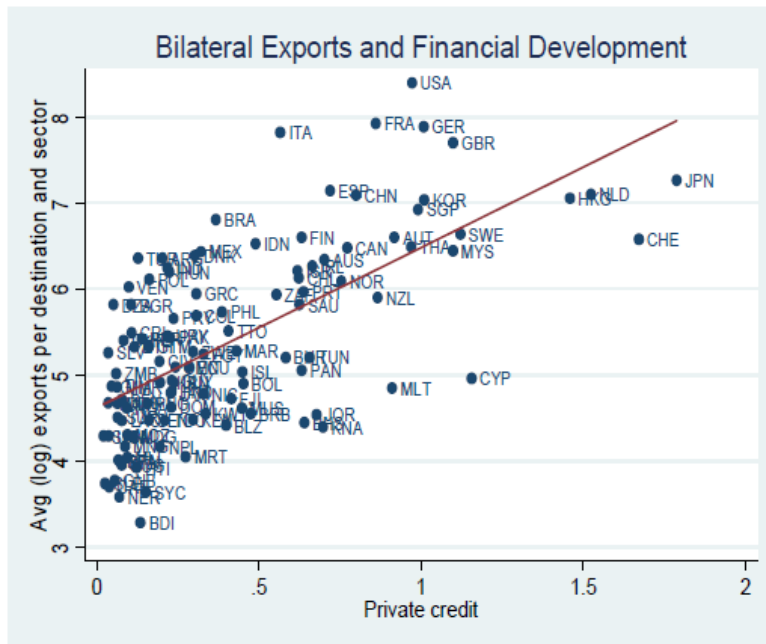
- ❑ Financial conditions shape MNC operations
 - Manova, Wei & Zhang (2015), Bilir, Chor & Manova (2019), Manova (2008)
 - MNCs only partially arbitrage capital costs across countries
 - Host financial market influences MNC entry, ownership, sales & financing
 - Foreign capital flows can compensate for weak local financial development



Financially developed countries export more in financially dependent sectors

□ Manova (2013): world

- Financial institutions: contract enforcement, accounting standards, creditor rights
- Financial market development: private credit / GDP
- Sector vulnerability: liquidity needs, external finance dependence, asset tangibility

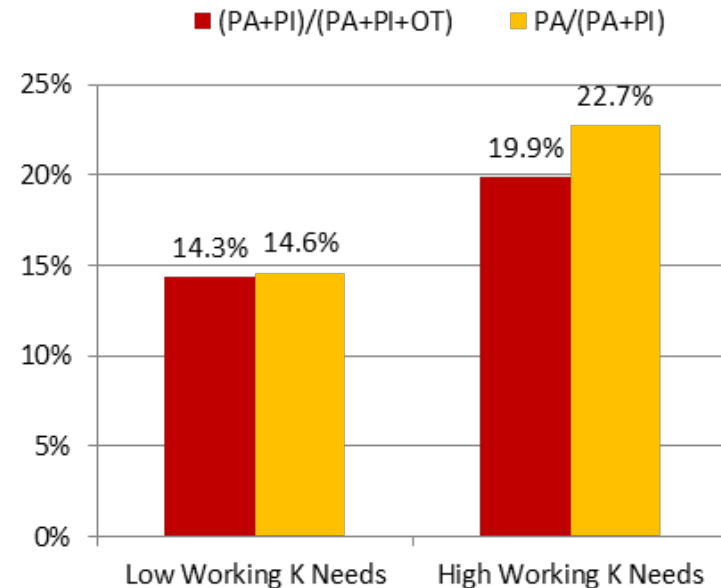
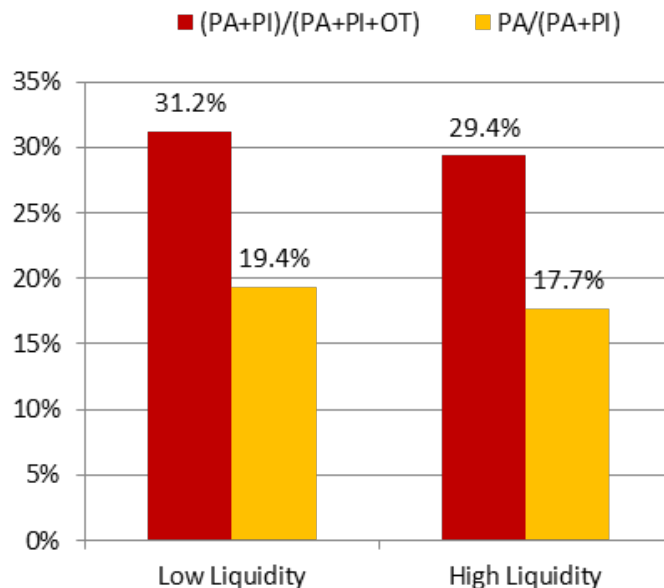




Financial constraints restrict firms to narrower, less profitable GVC segments

□ Manova & Yu (2016): China

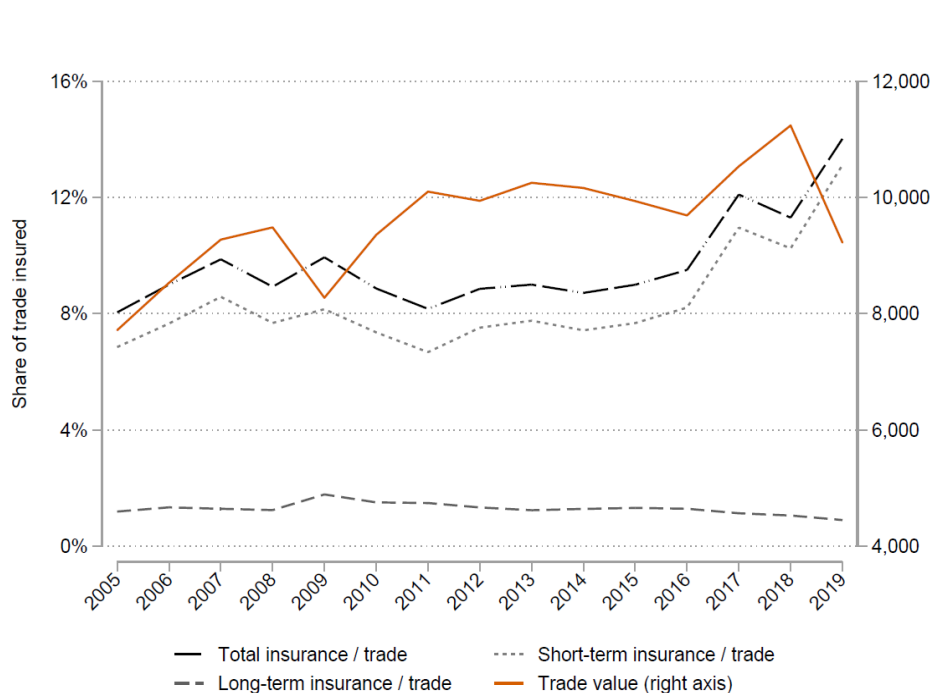
- Processing trade (especially pure assembly) entails lower costs, but also lower profits than ordinary trade
- Firms perform more processing trade (esp pure assembly) at lower financial health, in financially more dependent sectors, in financially less developed provinces



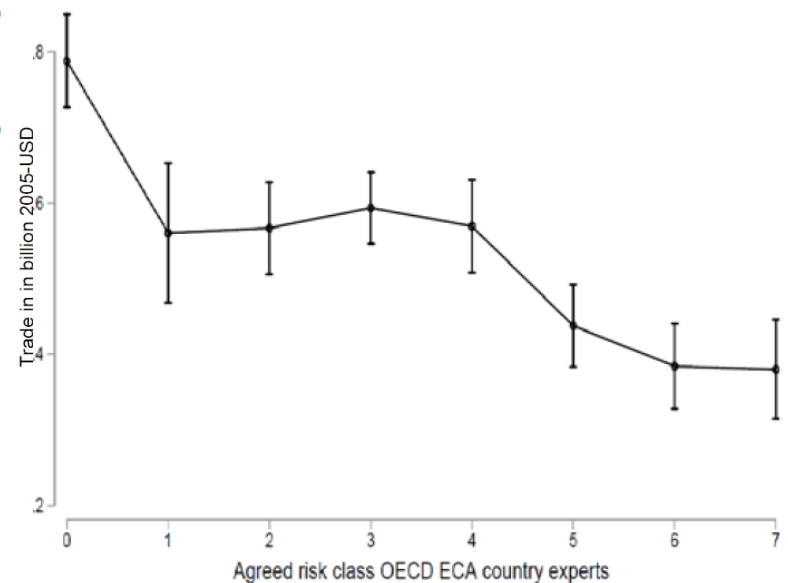


Risky trade needs private & public ECA export credit insurance

- Buus, Kroeger, Manova & Munch (now): world, Denmark
 - Economic & political risk raises trade finance costs & hinders trade activity
 - ➔ ECAs facilitate trade with risky markets that private insurers wouldn't cover



Private insurance / Total insurance





Global Innovation & Spillovers

- ❑ Traditionally, developing countries have looked to FDI from advanced countries for technology and knowledge transfer
 1. Technology diffusion: laterally, upstream & downstream through buyer-supplier links & employee turnover
 2. Tougher market competition: incentives to trim fat & upgrade technology
 3. Positive agglomeration externalities: specialized local inputs
 4. Negative congestion externalities: “business-stealing” of market & financing

MNCs Global Production & Innovation

- ❑ MNCs manage complex production & innovation activity worldwide, and increasingly offshore R&D, to both developed & developing countries

Mercedes-Benz Opens R&D Lab In Seattle

The new digital hub is planning on expanding to 150 people.

By Press Release Desk, News Partner
Nov 14, 2017 4:33 pm PT

Like 1 Share

Opening of the new Shanghai Research & Development Center as part of BMW's Innovation Day China.

15.06.2019 Press Release [ARCHIVE](#)

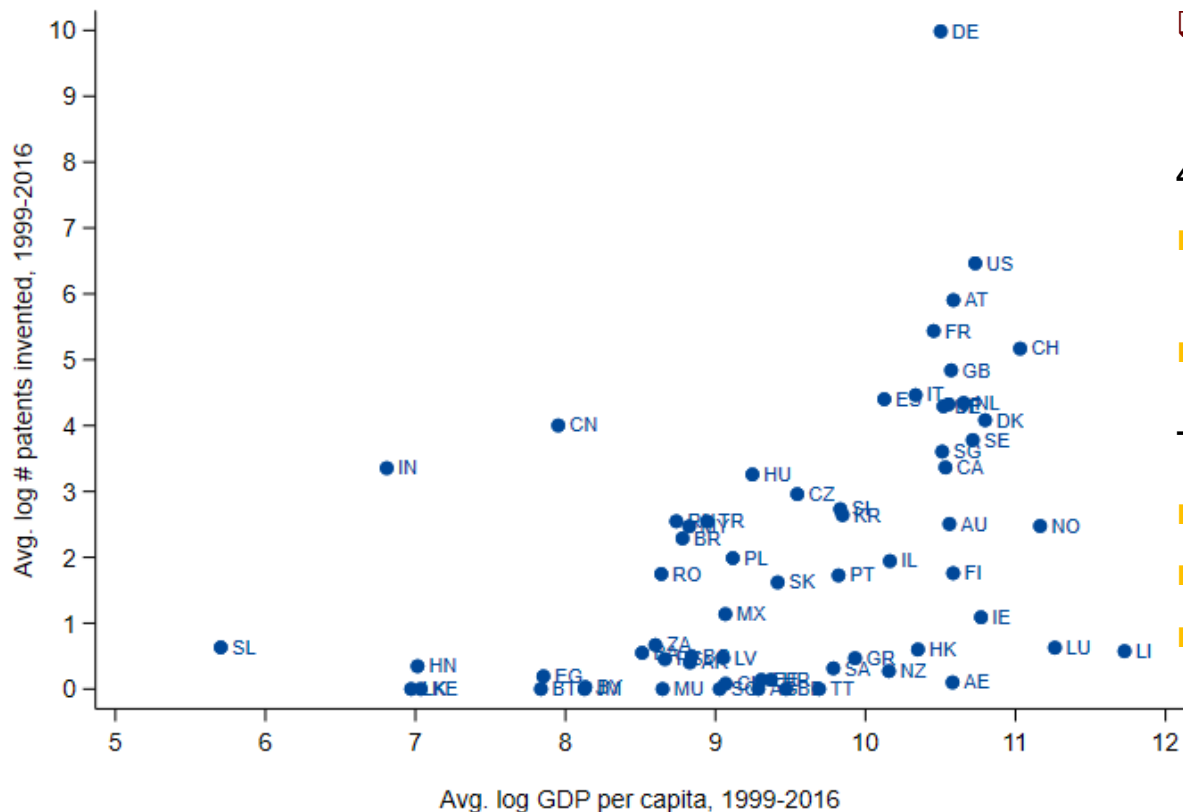
Shanghai/Munich. Today opened the newly BMW Group Shanghai R&D Centre as part of BMW's Innovation Day China. The event showcased BMW's latest developments in the areas of innovation, digital services, autonomous driving and automotive design.

#Technology





MNCs' global innovation follows countries' comparative advantage



□ Gumpert, Manova, Rujan & Schnitzer (new): Germany

43% DE MNCs innovate abroad

■ Top-5 hubs: USA, Austria, France, Switzerland, UK

■ China & India in top 15

Top-3 tech areas:

■ DE: org chem, energy, trans

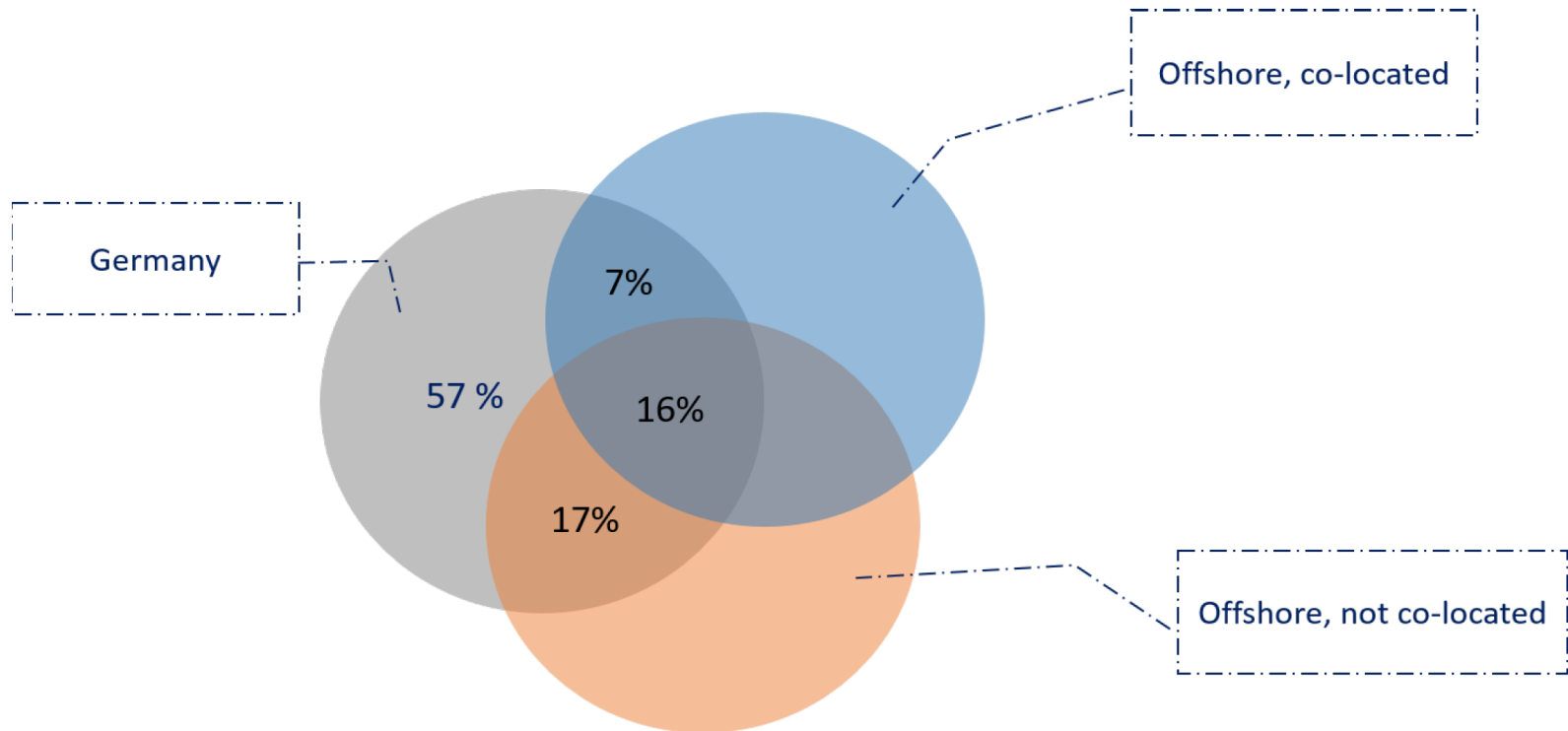
■ US: med tech, IT, telecom

■ CH: org chem, measure, med tech



MNCs offshore basic R&D to rich countries, bundle applied with production in developing

Share of **patenting MNC parents** that file patents with inventors in...

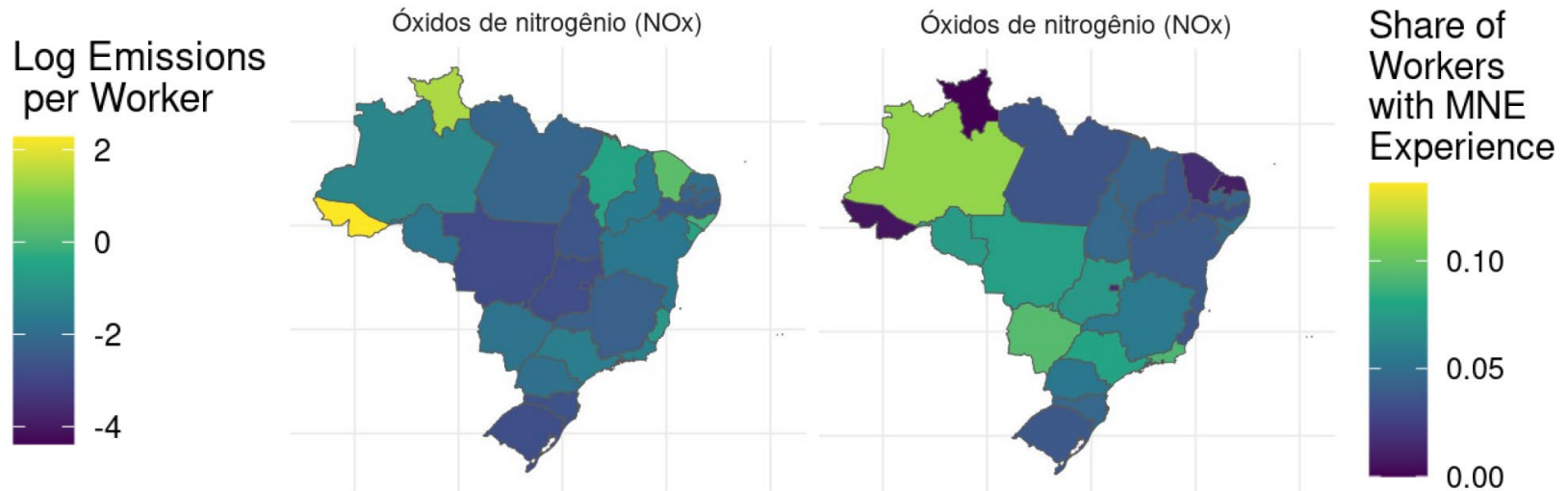


N = 2,374



MNCs As Climate Changers

- ❑ Carballo, Manova, Volpe & Steinwender (new): Brazil
 - MNCs are cleaner & help local firms get cleaner
 - Ex-MNC employees transfer knowledge & implementation capacity



Autonomous vehicle startup AutoX lands driverless testing permit in California

Kirsten Korosec @kirstenkorosec / 9:35 PM GMT+1 • July 17, 2020

Jul 2020



AutoX becomes China's first to remove safety drivers from robotaxis

Rita Liao @ritacyliao / 3:56 AM GMT • December 3, 2020

Dec 2020



ECD GFP

New Frontier Movers

- ❑ 20th c: West & Western MNCs pushing innovation frontier
- ❑ 21st c: Leapfrogging by pioneers in developing countries

Waymo launches robotaxi service in San Fr

Rebecca Bellan @rebeccabellan / 5:03 PM GMT+1 • August 24, 2021

Aug 2021



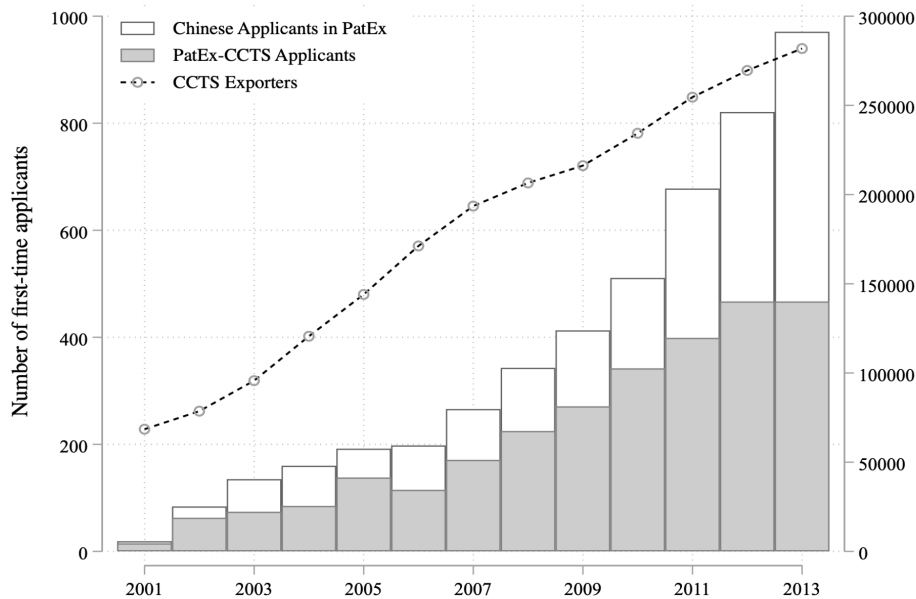
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Emerging economy pioneers increasingly patent in US & EU for global stamp of approval

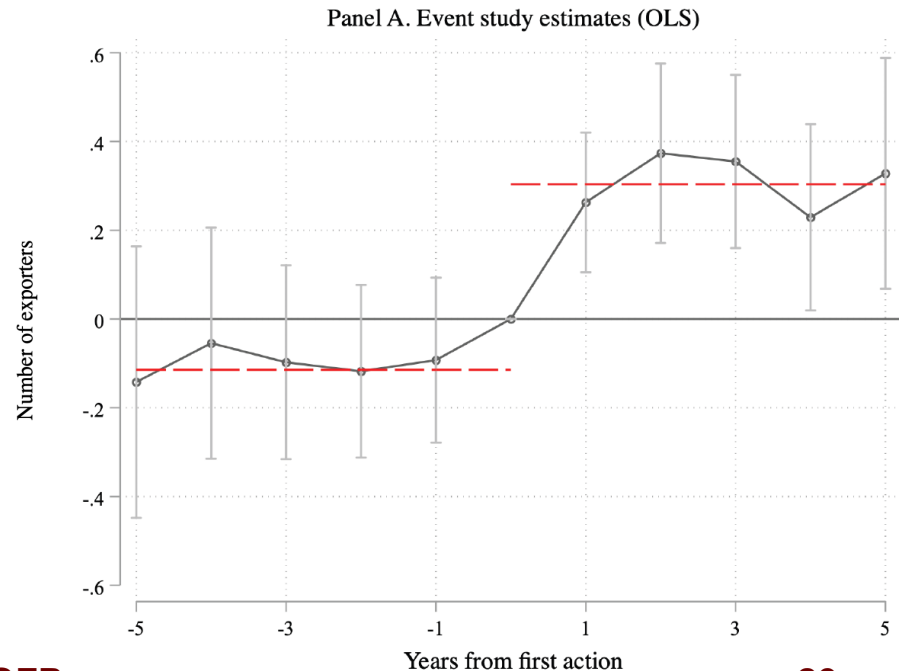
- Gong, Li, Manova & Sun (2022): China
 - US patent expands Chinese firms' global sales by signaling quality capacity & contract credibility
 - ➔ Low IPRs in developing countries may deter both inbound FDI & host R&D

Figure 2: Chinese Trade and USPTO Patent Activity Over Time



Kalina Manova, UCL

OECD GFP





Globalization for Growth+++

- ❑ Growth+++ objectives are not singularly defined
 - Multifaceted inclusivity: intersectional equality
 - Multifaceted resilience: stable output, sustained growth
 - Multifaceted sustainability: stable institutions, social cohesion, climate health

- ❑ Can they be? Should they be?
- ❑ Who should decide? Who can? Who will?





Multilateralism Of & For The Future

Given 21st c. globalization...

- Do growth & growth+++ objectives vary across countries?
- Are there synergies or trade-offs between growth & growth+++?
- What policies are efficient & effective?
- What role for multilateralism, regionalism & industrialism?





Multilateralism for Growth & Growth+++

- ❑ The world is more interconnected & interdependent than ever
 - This amplifies some global challenges and creates new ones
 - But it also creates unique opportunities for global action

- ❑ The appeal of multilateralism & deep integration
 - Global challenges require global action & align incentives
 - Growth+++ objectives require broad action
 - Global broad action requires coordination



Global Environment for Global Growth

20th c.



21th c.



YOU CAN'T SPELL
CHALLENGE
WITHOUT
CHANGE

Silhouettes of people climbing ropes attached to the letters of the word "CHALLENGE".



Inspiration

20thc. GVC Classic: Mattel's Barbie Doll

“The **raw materials** for the doll (plastic and hair) are obtained from Taiwan and Japan. **Assembly** used to be done in those countries, as well as the Philippines, but it has now migrated to lower-cost locations in Indonesia, Malaysia, and China. The **molds** themselves come from the United States, as do additional **paints** used in decorating the dolls. Other than **labor**, China supplies only the **cotton cloth** used for dresses.

Of the \$2 **export value** for the dolls when they leave Hong Kong for the United States, about 35 cents covers Chinese **labor**, 65 cents covers the cost of **materials**, and the remainder covers **transportation** and **overheads**, including **profits** earned in Hong Kong.” (Feenstra 1998)



21stc. GVC Classic: Apple iPod



- Apple designs iPod in US, outsources its manufacture abroad, and sells globally
 - 451 parts + assembly
 - retail value: \$229

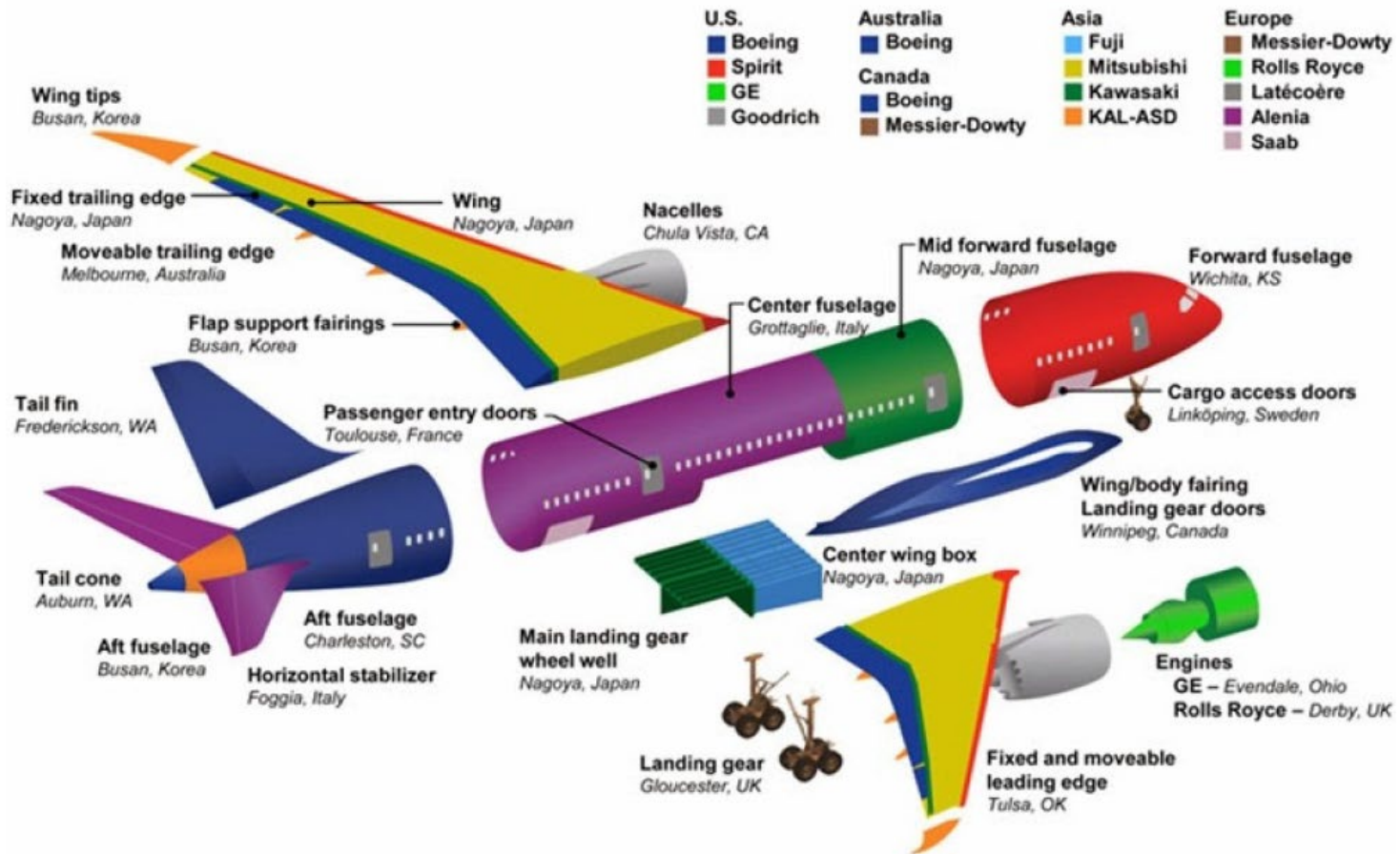
Key components: hard drive \$73 (Toshiba Japan in Philippines and China), display module \$20 and video/multimedia processor chip \$8 (Broadcom US in Taiwan), controller chip \$5 (PortalPlayer in the US)

Final assembly: \$4 (Asustek, Inventec Appliances and Foxconn in China)

Although Chinese workers contribute 1% of iPod value, exporting 1 finished iPod from China to US contributes \$150 to bilateral trade deficit

A GVC Spider: Boeing's Dreamliner

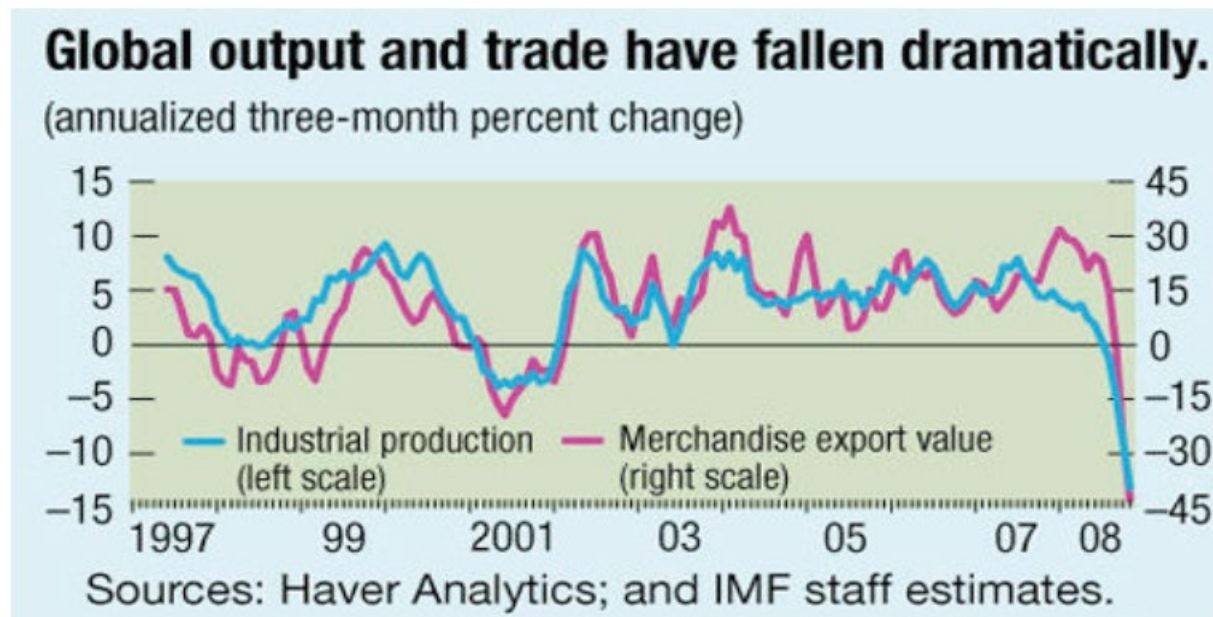
Global Partners Bring the 787 Together



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2008-2009 Global Financial Crisis

- ❑ World trade declined rapidly: in 2009, trade fell 12% & GDP fell 5.4%
 - Severe contraction in small open economies, reaching up to 30%
 - Trade & FDI spread crisis to countries unexposed to US subprime mortgage
 - Trade collapse attributed to plummeting demand & dearth of trade finance



Crises Beget Protectionism



- ❑ Political pressure built quickly & numerous trade barriers were adopted at crisis peak ... despite governments' attempts to resist

- Nov 2008: G20 agrees to “refrain from raising new barriers to investment or to trade in goods and services”
- Jan 2009: Tony Blair appeals at WEF, “[We] must understand that the right response is not beggar-thy-neighbor policies but to get world leaders to come together and work out a proper world trade deal”
- Apr 2009: G20 summit commits to raise \$250bil for trade finance



GVC Efficiency vs. Resilience

- ❑ Complex optimization problem
 - Cost minimization, input customization, reputation → fewer suppliers
 - Supplier shocks → diversification
 - Upper-tier suppliers & buyers

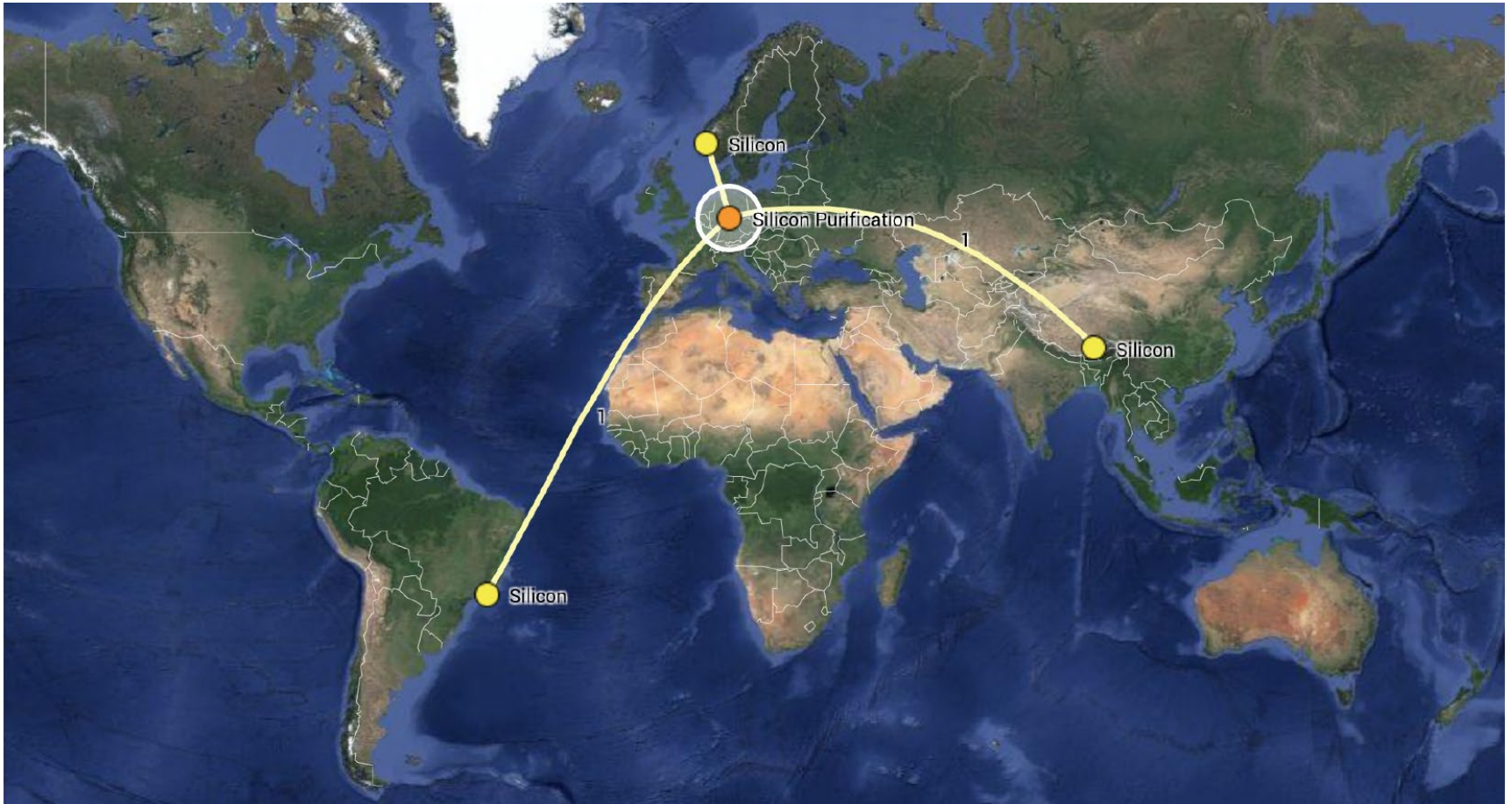
- ❑ Ambiguous optimal firm behavior... and economic policy
 - Shock size, frequency, persistence
 - Shock correlation & propagation across firms & markets
 - Heterogeneous exposure, anticipation & response across firms

- ❑ Can we innovate our way out of trade-offs to capitalize on gains?

The Life of Electronic Chips



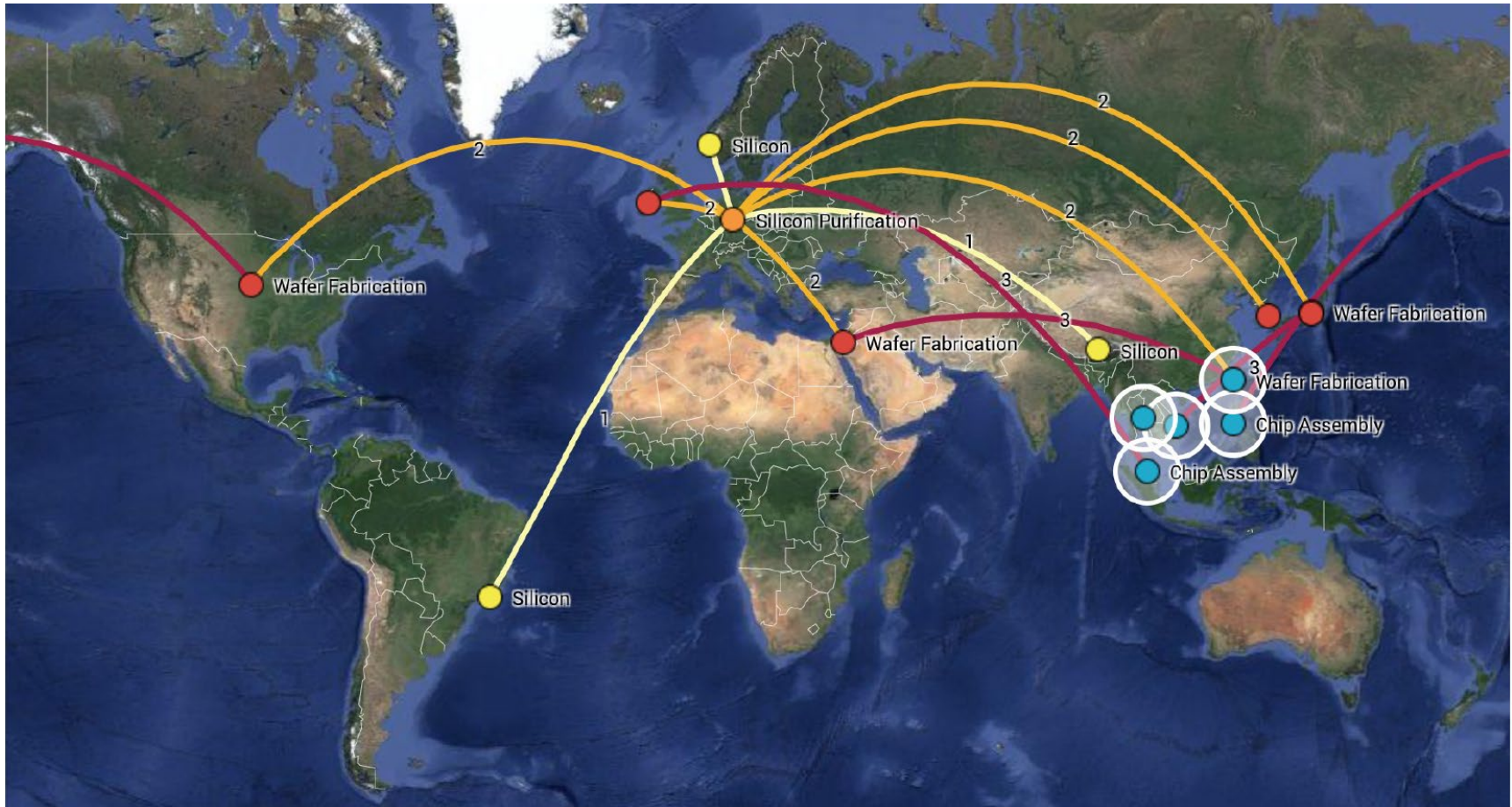
The Life of Electronic Chips



The Life of Electronic Chips



The Life of Electronic Chips





GVCs Amplified COVID Effects

- Macro & micro level: Own-country, upstream supplier and downstream buyer exposure all hurt aggregate income & firm stock returns

