



Productive Development Strategies for LAC

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Connecting the Productivity Challenge with Productive Development Policies
in Latin America and the Caribbean

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Two words of caution

“Any random collection of six economists is sure to produce at least a dozen different opinions on the subject [...]” (Geroski, 1989)[p. 20]

LAC: very different countries.

- Not all countries face the same challenges, and not all will benefit from the same recommendations.
- high level discussion (framework) to analyse specific countries, as part of a regional approach

Focus and main message

- A. From productivity to heterogeneity **challenges**, and back
 - LACs lag behind other emerging countries in capturing productivity gains
 - “Regressive” structural change: missing the technological cycles?
 - High within industry heterogeneity and inequality
- B. The central role of Science, Technology and Innovation (capabilities), and their elusive nature
- C. Addressing the challenges through PDP
 - Focus (what): Active, coordinated, measures to **expand STI capabilities** to transform production, **including all society**.
 - Process (how): Mixing **experimentation** with comprehensive **Productive Development Strategies**, based on **rigorously defined and inclusive national prioritisation**, and building **institutional capabilities**.
 - CEPAL can play a pivotal role

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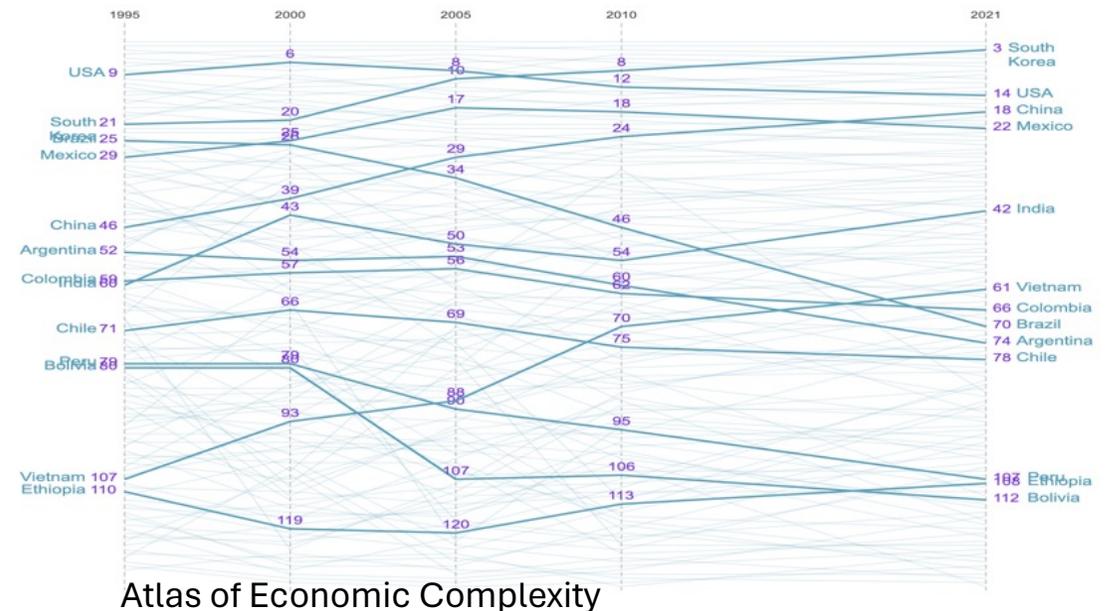
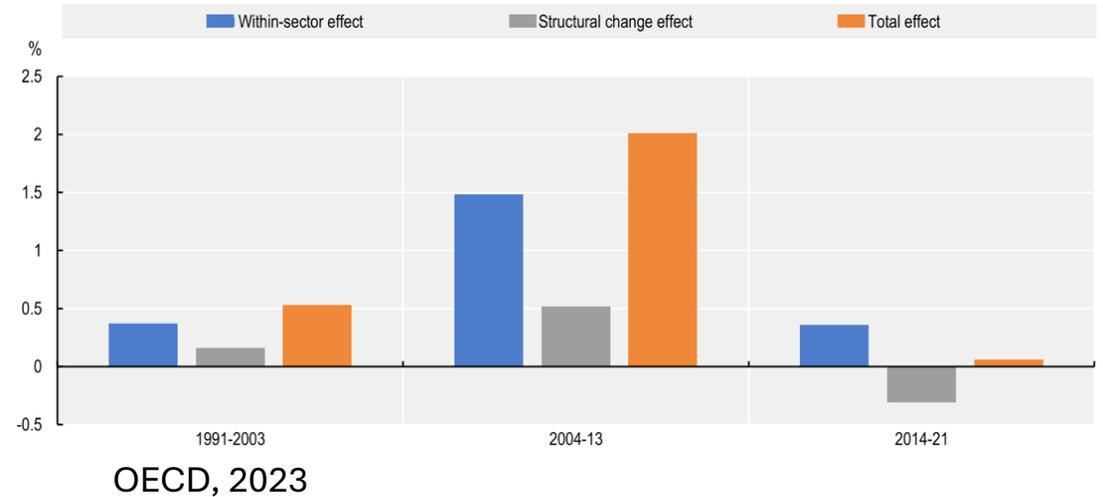
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1. The main productivity challenge in LAC is due to lack of structural transformation

- Two related process of structural change
 - **Within:** firm growth and organisation of production (Ciarli et al, 2010)
 - **Between:** structural transformation key to economic growth since the industrial revolution (Sen, 2023; Ciarli, 2012)
- LAC: productivity growth **mainly within** sectors → **no structural transformation** ([Chart examples](#))
 - Efforts to invest in high tech sectors, do not always diversify exports (Gutman and Lavarello, 2023; Cadena et al, 2023) [[Chart](#)]



2. The within productivity challenge is deeply related to heterogeneity and inequalities

- 1. The long tail.** Within industry productivity increases are driven by firms in the top decile (Figal Garone et al., 2020) (a plural economy (Katz, 2023))
 - Loose connections between the formal and the informal (Caldarola and Ciarli, 2024)
- 2. Inequalities** between and within cities/regions: no spillovers, no agglomeration economies (Ianchovichina, 2024).
 - Dense cities are not as productive
 - Disconnection between formal and informal (dual/plural economies)
- 3. Low social mobility** (OECD, 2023).
 - Access to education
 - Access to skills, and matching between workers and firms
 - Access to talents (Akcigit et al., 2020).

3. LAC are not alone in experiencing low productivity growth, but the others are building new technologies

Productivity growth has slowed down globally, especially in high income countries

1. Kondratiev waves. Radical innovations take time to be integrated in production processes (Brynjolfsson et al., 2017).
 - Followed by a cluster of incremental innovations (Silverberg and Verspagen, 2003).
 - Leading countries hold the knowledge also for incremental innovations (Fagerberg and Verspagen, 2020) – the other countries catch up
2. LAC are not taking the opportunities of the incremental innovations – unlike other emerging countries
3. High income countries are increasing the use of industrial policies to win the global race (Criscuolo et al., 2023; DiPippo et al., 2022; Juhász et al., 2022): even more barriers for LAC

4. It is important to consider the productivity challenge in relation to the other challenges that LAC are facing

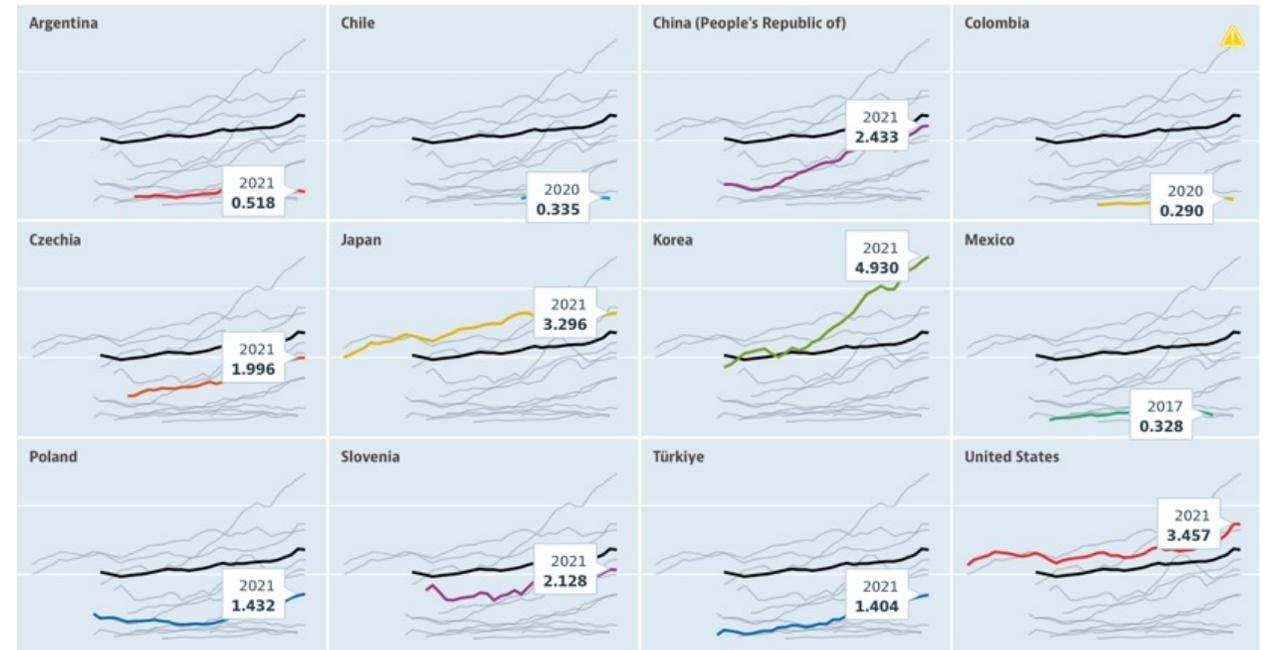
1. Besides distribution and global trends
 - Environment - including extraction of critical materials
 - Health
 - Poverty
 - Conflicts
2. PDP are no more just about productivity (Ciarli et al, 2024a; IMF, 2024).
 - Trade offs (e.g. agricultural productivity under climate stress; social unrest under inequality)
 - Synergies (e.g. Porter hypothesis, green investment (OECD, 2023), technological races) are important

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The core to addressing the productivity challenge is Science, Technology and Innovation capabilities

- Innovation drives economic productivity and growth (Metcalfe, 2014).
- Low R&D investment, despite higher returns to R&D (Cirera and Maloney, 2017; Goñi and Maloney, 2017).
- → Relevance of the conditions to undergo innovation
 - Macro stability (Katz, 2001 & Cimoli, 2023).
 - Financial volatility (OECD, 2023).
 - Balance of payment (Porcile et al., 2023).
 - Context: market (uncertainty) and knowledge (no spillovers/learning) (Arza et al., 2023).
- “Selective” industrial policies
 - distorted selection, low risk incumbents vs innovative/fittest



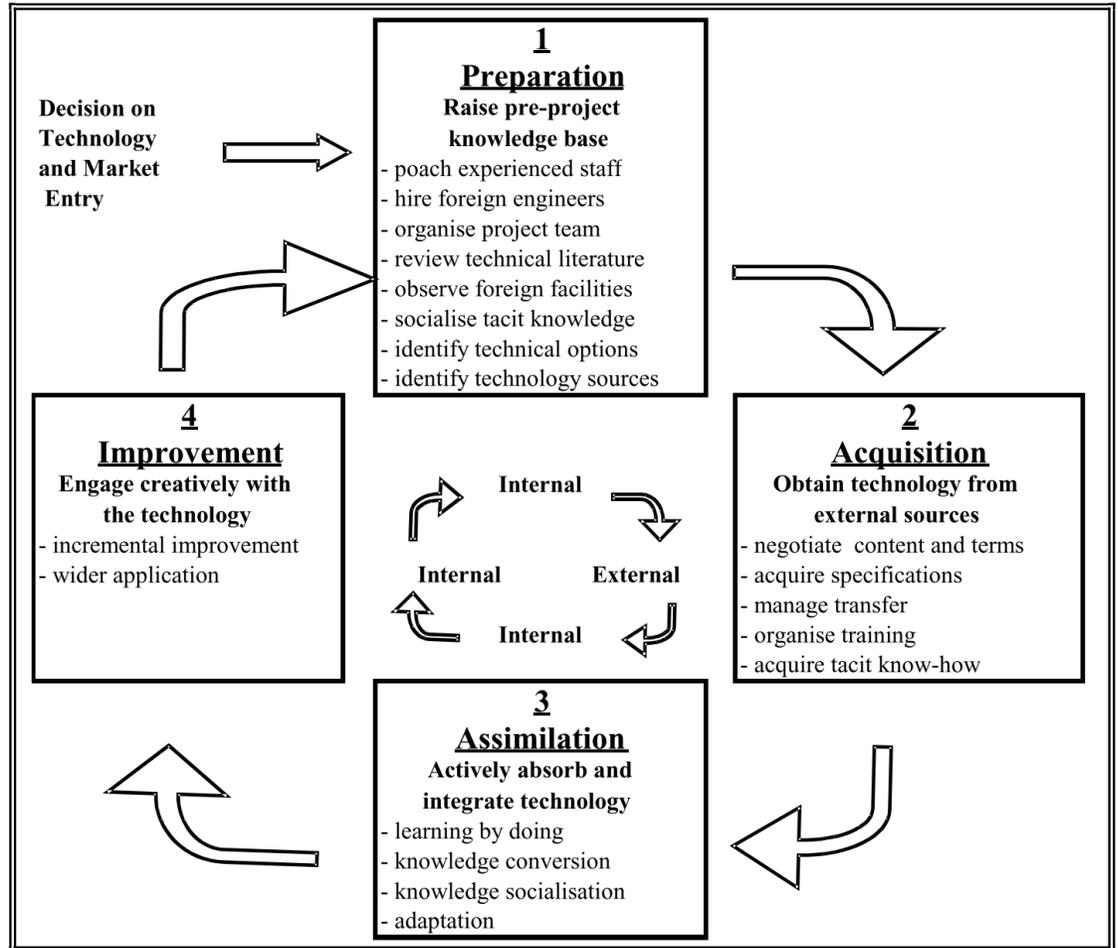
Gross domestic spending on R&D Total, % of GDP, 1981 – 2022 (OECD (2024), doi: 10.1787/d8b068b4-en (Accessed on 07 March 2024)).

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1. Active, coordinated, measures to expand STI capabilities to transform production: there is no shortcut

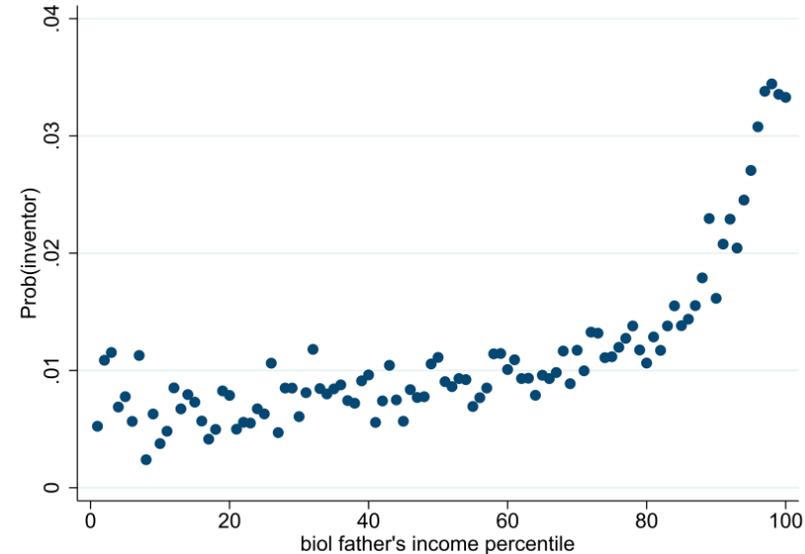
- Innovation is a dynamic, evolutionary, process: continuous learning (by firms (Rosenberg, 1982), consumers (Witt, 2001), institutions (Cáceres et al., 2018))
- Two conditions necessary from my reading of a rich and diverse literature
 1. Institutional and technological **support, innovation incentives, regulatory disciplines** (Amsden, 200; Lin and Monga, 2010);
 2. **Capabilities** (Bell and Pavitt, 1993; Katz, 1985; Lall, 1992):
 - Investment, engineering, productive, technology, scientific,...
 - Passive learning of foreign tech → problem solving → innovation
- **Key policies:** building managerial, production, and technological capabilities (Cirera et al, 2022).
 - Improve international scientific collaborations (Ito et al., 2023).



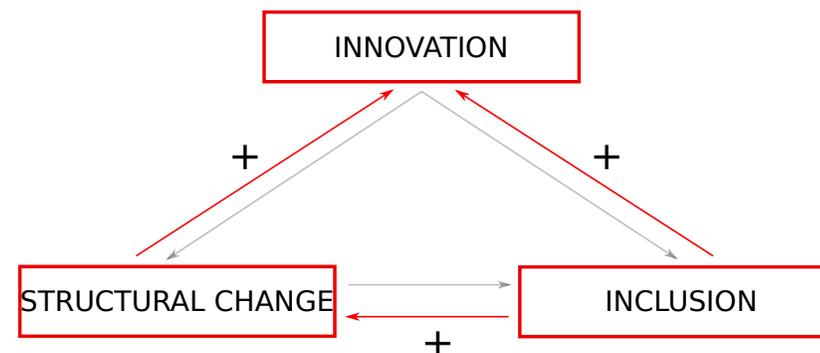
Hyundai, 1960-1990 (Bell, 2009).

2. Inclusive structural change: reduce disparities and improve opportunities to reduce the misallocation of talents to innovation

- Innovation occurs everywhere (Charmes et al., 2020; Mustapha et al., 2022).
- Inventors are from privileged lineages (Aghion et al., 2017; Bell et al., 2016).
- Lower income countries that have improved income distribution, innovate more (Saha and Ciarli, 2018).
- **Key Policies:** quality of education and eliminating physical, economic and cultural segregation



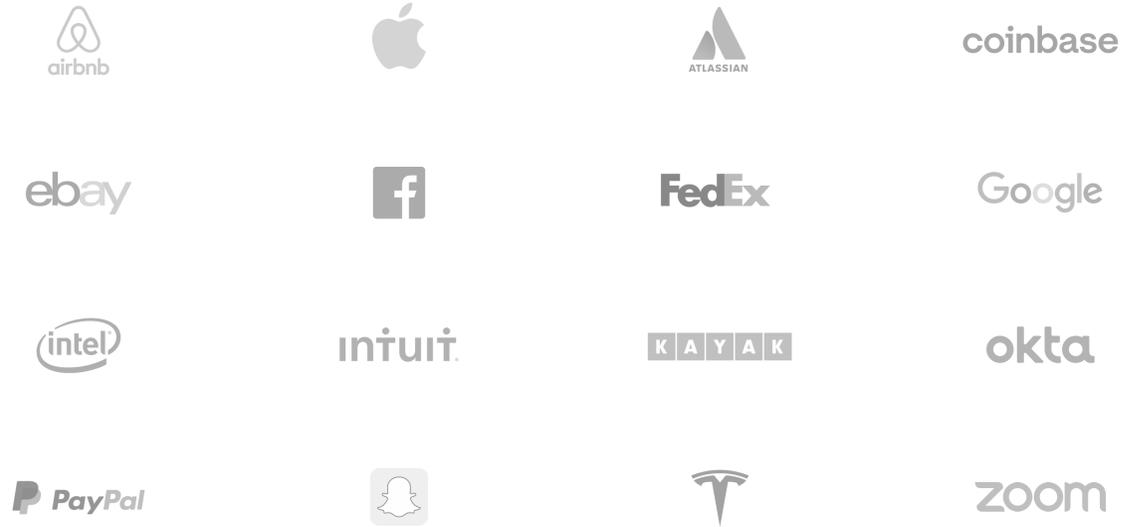
Aghion et al., (2017).



Saha and Ciarli (2018).

3. Promote virtuous selection

- Selection can drive economic productivity, depending on the diversity of technical progress functions and income elasticities of demand at the industry level (Metcalf et al., 2006).
- The macro (and meso) environment should select the most innovative, not the least risk taking
 - Selective protection and regulatory discipline
 - Returns to innovation are not predictable (Kerr et al., 2014).
- **Key policies:** Institutional and technological support, innovation incentives, regulatory disciplines (Amsden, 200; Lin and Monga, 2010).



[Bessmer Venture Partners Anti-Portfolio.](#)

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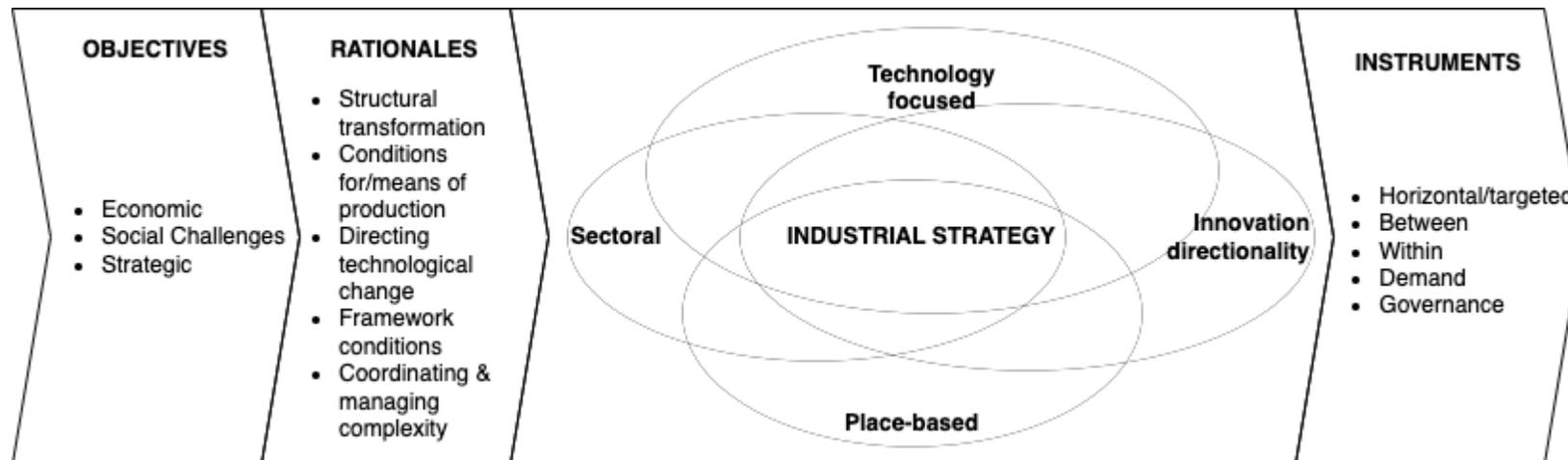
1. Rigorously define priorities based on the nature of the challenges, and the rationales for PDP

Before considering which intervention, consider why they are needed (Ciarli et al, 2024a, IMF, 2024). Rationales help define a yardstick.

1. Creation of the conditions for (and the means of) efficient production
2. Creation of framework conditions
3. Directing technological change
4. Structural Transformation
5. Coordination and managing complexity

2. The combination of challenges is better addressed with Productive Development Strategies

- A systemic approach to innovation (Freeman, 1995; Maloney, 2017; Metcalfe, 2014):
diffusion, learning, spillovers
 - E.g. Firms cluster (Delgado et al., 2016), few cities patent most inventions (Balland et al., 2020).
- Coordinating interventions to address synergies and trade offs
 - Regional disparities, climate challenges, skills, health



Ciarli et al, 2024 (based on Criscuolo et al, 2022)

3. Experiment and connect policy and academia

Experimentation and evaluation: we know comparatively little of what interventions work in different contexts

Improve policy-academia synergies: policy has little patience for academic results. Academic studies struggle to connect with policy makers realities.

4. Nurture policy capabilities to design, coordinate and monitor Productive Development Strategies

Crafting an industrial strategy demands comprehensive knowledge on existing and prospective technological and productive capabilities (Ciarli et al, 2024b).

- At a minimum, the strategy requires defining aims, developing rationales (or narrative), and devising a set of instruments, where the “users” of the different policies need to be identified from the productive sector at wide.
- Capabilities to coordinate complex strategies

5. Establish independent bodies to monitor and grant continuity to productive development strategies (with some agency and leverage)

Provide analysis, long term vision, monitoring and evaluation, connect with academia and other stakeholders, and reduce “policy churn” (Valero and van Ark, 2023).

Independent from Government, but with political leverage

ECLAC is in a perfect position to take/collaborate such role at a regional level, investing in dedicated monitoring capacity

- A PDS (industrial strategy) office, connecting policy, industry, academia and civil society
- With vision connecting with related challenges - social protection, environmental impact, etc.

Summary - and main message

1. LACs lag behind other emerging countries in capturing productivity gains
 - “Regressive” structural change: missing the technological cycles?
 - High within industry heterogeneity and inequality
2. Weak science, technology, and innovation **systems**.
3. Needs active, coordinated, measures to **expand STI capabilities** to transform production, **including all society**.
4. Can be done mixing **experimentation** with comprehensive **Productive Development Strategies**, based on **well defined and inclusive national prioritisation**, and building **institutional capabilities**.
5. **CEPAL** can play a pivotal role, **connecting policy and academia**, and establishing a **LAC Productive Development Strategy Institute**.



Thank you for your attention
Looking forward to a **productive** discussion
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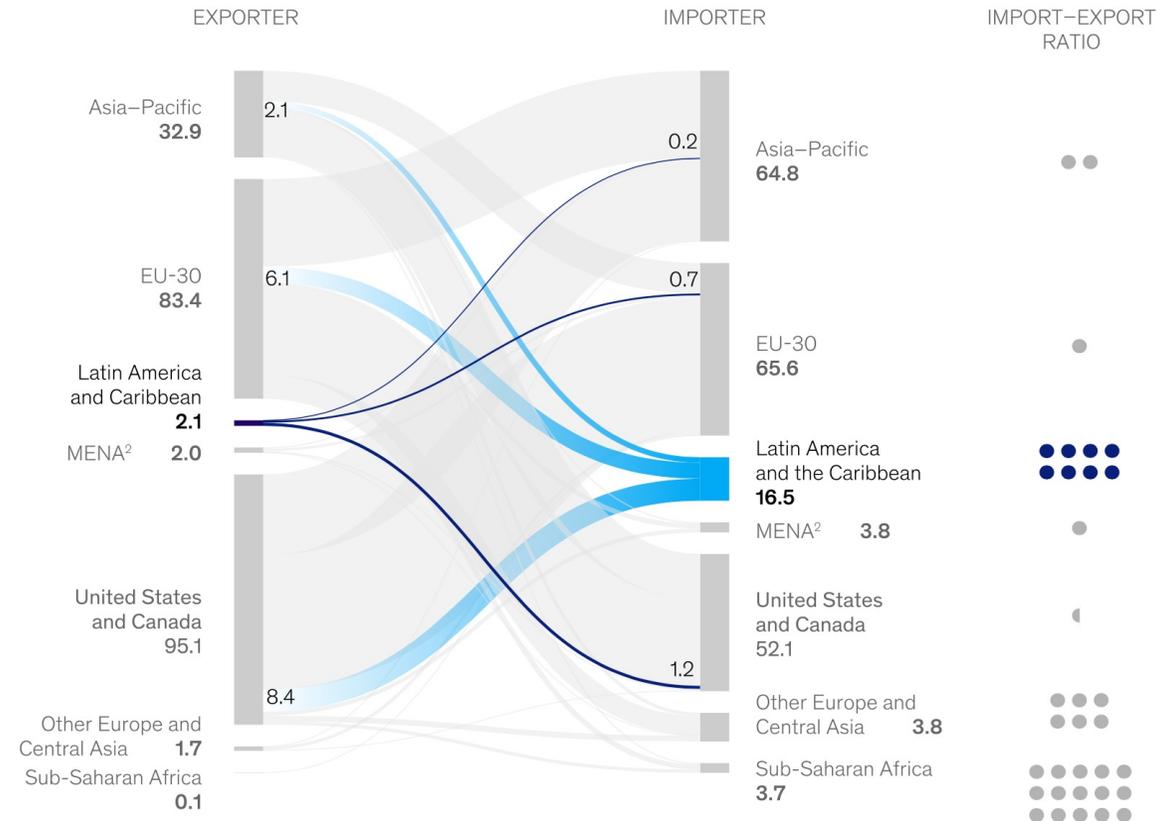
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Appendix

LAC import about eight times as much IP by value as it exports ([Back](#))

Cross-regional intangibles flows, US \$ billion

IP charges,¹% of total cross-regional exports/imports, 2019, total exports = US \$218 billion

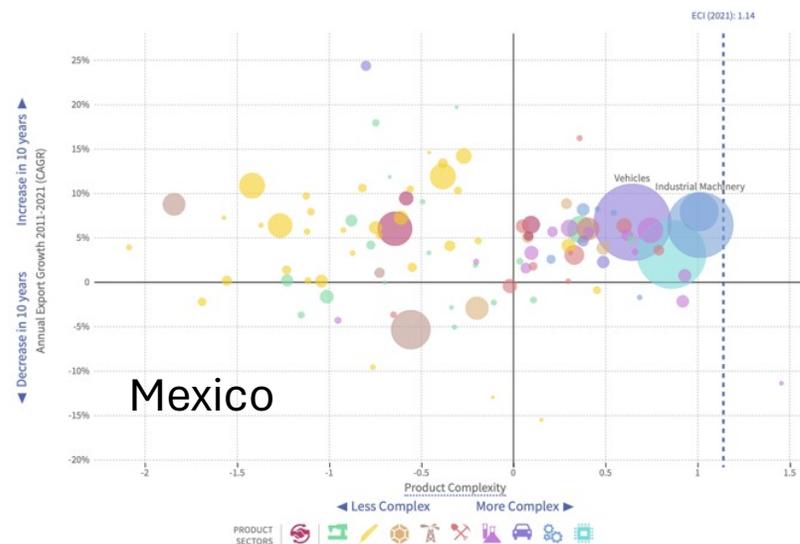
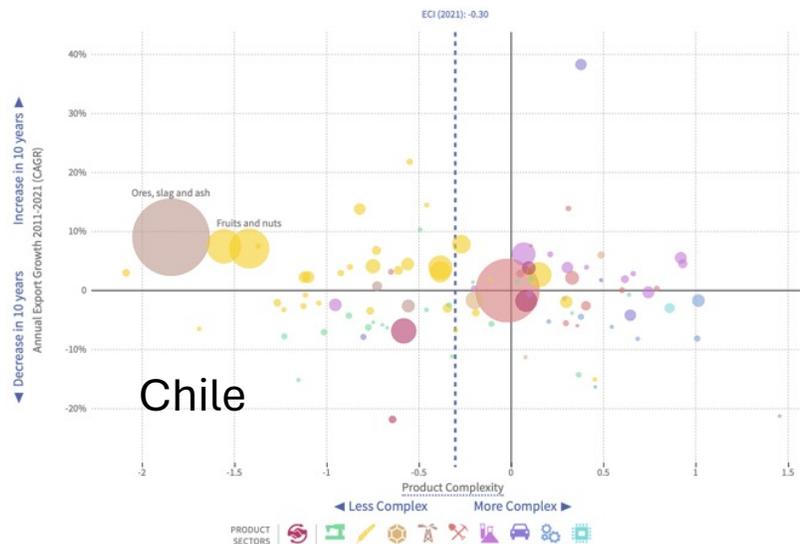
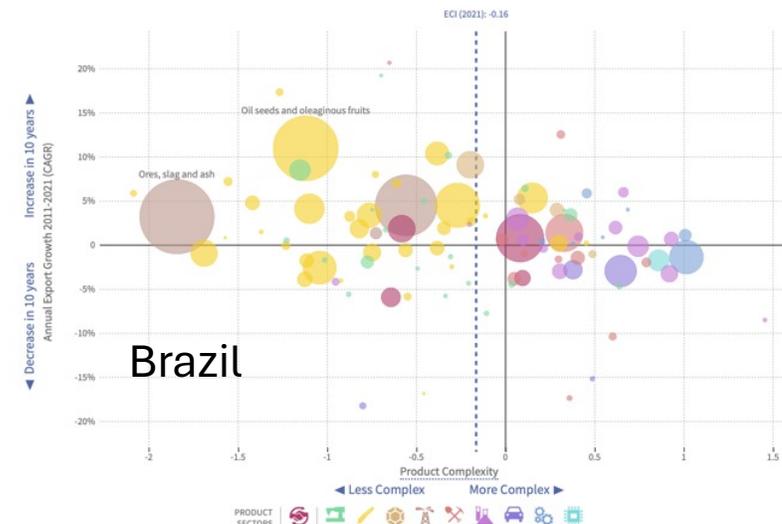
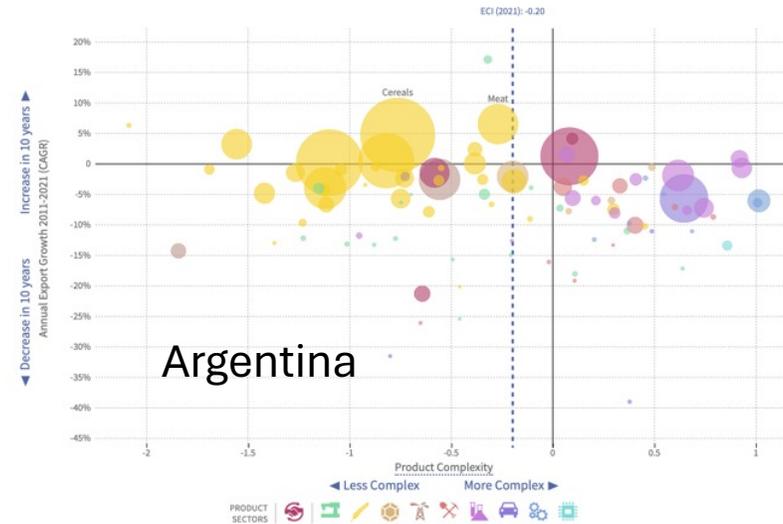


¹Only flows with value of >\$100 million shown on chart. Overseas territories have been excluded from the analysis.

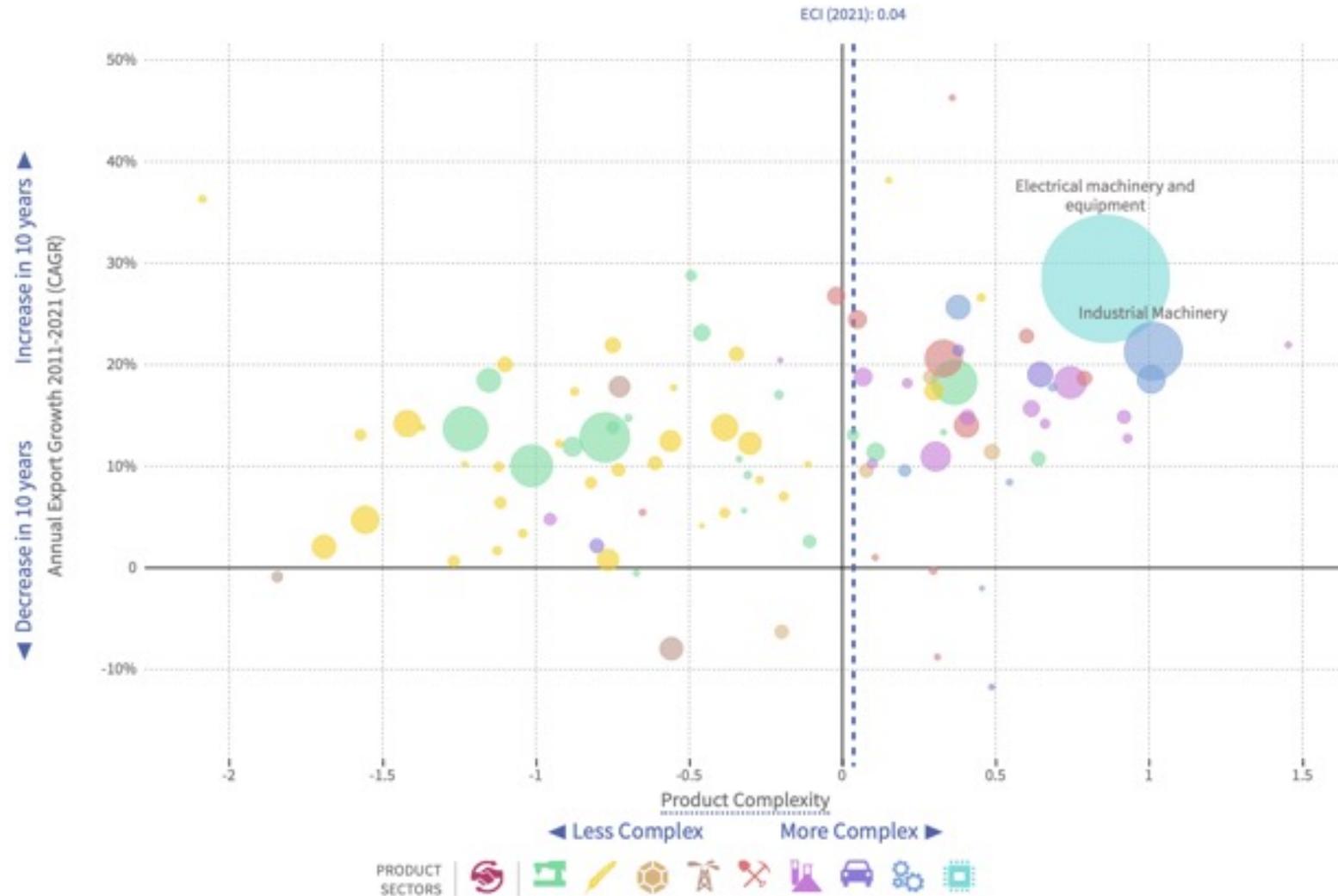
²Middle East and North Africa.

Source: OECD Balanced Trade in Services (2022); McKinsey Global Institute analysis

Changes in the sophistication of exports: Argentina Brazil, Chile, Mexico (Back)



Changes in the sophistication of exports: Vietnam ([Back](#))



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