

The message (for LA countries, but not only):

Broaden and enrich the study of Technological Capabilities Accumulation processes,

Differentiate STI Strategy/ policies- needed to strengthen the firms' TCA process- in accordance to the countries **development profiles**

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The essence of the argument in a nutshell

- **A capability view of catch-up development. Capabilities** is a key notion in Evolutionary Economics. Not only incentives, not only setting the rules of the game right, not only macroeconomic stability and market oriented reforms, but also **capabilities building, learning as competence, technological upgrading and leapfrogging**. Not just **comparative advantage** but also transform it through capabilities to **competitive advantage**.
- The **perspective on Innovation** and the understanding of the concept/ phenomenon, as well of the STI policies, is too **narrow**.
- **A need to frame the TCA processes at country level** including technical, economic but also environmental and social and political factors → Identify development **profiles** of LA countries in terms of Techno-Economic and Environmental spheres (TEES) and the socio-political spheres (SPS) in order to analyze TCA and discuss the implications.
- In practical terms, a **broadening and enriching** of the study by including environmental variables and socio-political variables.

The point of departure: A social and political concern Is something missing in the STID study and policy in Latin America?

- Considerable effort in STI policies (since the 1970s) but the results nor adequate neither well enough.
- “Latin American countries **do not overcome the middle income trap**, including the more developed countries in the region”.
- The authors call “to **change the lenses** we used to analyse TCA and look at **other spheres that** transcend the indicators associated with inputs and outputs of domestic STI capacities and capabilities”.
- In this respect they rightly introduce **two other dimensions**:
 - i) the **environmental sphere** in close relationship with the techno-economic,
 - ii) a finer understanding and definition of the **social and political** spheres,I would suggest to add a **third** one which in some cases is crucial, the **geo-political** sphere.

Other ways to broaden and enrich the framework of the study of TCA processes at country level

- Go for a unified approach of STIG, by including Knowledge-Intensive Innovative Entrepreneurship:
- Research and non Research Activities → Innovation-
→ KIE → Growth/Development
- A better balance between excellence and relevance in Research,
- The dynamics of 4RI and windows of opportunity for leapfrogging and catch up. But also negative implications in terms of employment at least in the transitional period, in terms of protecting personal data.
- The role of education and training.

The relation of innovation and technological capabilities building with macroeconomic stability and competition is essential

- Innovation and Technological development is related to risk and uncertainty Macroeconomic stability is needed to promote innovation and capabilities building
- Innovation and Competition.
- The propensity of the business firms to innovate. Do they need and do they want to innovate or they just seek rents in a protected, relatively closed and oligopolistic or less competitive environment.
- But the question is how much competition?
- Very little competition hinders innovation and technology upgrading, too much destabilizes and sometimes can destroy innovative ventures.

The development profile of country is essential for choosing the appropriate strategy and policy.

- “Countries differ in terms of their development profiles, instead of having a general analytical framework to generate quite similar recommendations for all countries, the design of STI policy has to take into account these different initial conditions. A new innovation policy is required to move from the middle income stage to catch up”.
- Dutrenit: “Instead of having a model of STI policy for Latin America we need different types of STI policy strategies to strengthen the firms’ TCA process in accordance with the countries’ development profiles, which in turn will make the construction of domestic capacities stronger.
- A country’s technology position matters.
- Middle income trap, low growth trap, stuck in the middle in the international division of labour.
- Varieties of capitalism and different socioeconomic configurations-→ impact on innovation and economic performance.

The System of Policies Approach

- The Systems of Policies View: more coordination with other public policies.
- Pay attention to other societal needs (poverty, food production, diabetes, RES, Water supply) → Mission oriented research based on the “problem solving” character of innovation.
- The STI Policy should include the goal of social welfare in addition to those improvements in productivity and competitiveness → TEES, SPS and TCA stronger and to make it clear the role of TCA to development processes →
- In Europe: A need for better coordination between cohesion policy (delivered via the Structural Funds), the EU macroeconomic and competition policy, EC Research Framework Programmes (FPs), other EU initiatives

Transferability and good practices

- Not only transfer of good practices.
- Benchmarking vs Bench learning.
- Context matters.
- The devil is in the details
- Implementation matters very much
- Human Factor matters very much.

Variables, measurement and data

- New Approaches
- New variables
- New metrics
- New indicators and ways for measurement
- New kind of data