The Resurrection of Demand Side Policies for Innovation in Latin America: The Case of Public Procurement.

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IDB

IDB

- **Established in 1959 the Inter-American Development Bank (IDB) is the first and most important regional development bank and main source of multilateral financing for socio-economic development in Latin America and the Caribbean.**

- **Over the period 1961-2015 the IDB has approved loans for a total amount of $183 billion and mobilized additional resources for $403 billion.**

- **Since its foundation the IDB has recognized the importance of STI for development (S+T&I) and it has played a key role in building institutional capacities by member countries in this area. Over last ten years the IDB has lent $8 billion only for S+T&I projects.**

Market demand is vital for innovation….

- **Since Marshall (20s), Smookler (60s) , … it has been recognized that market demand is a key determinant for innovation.**

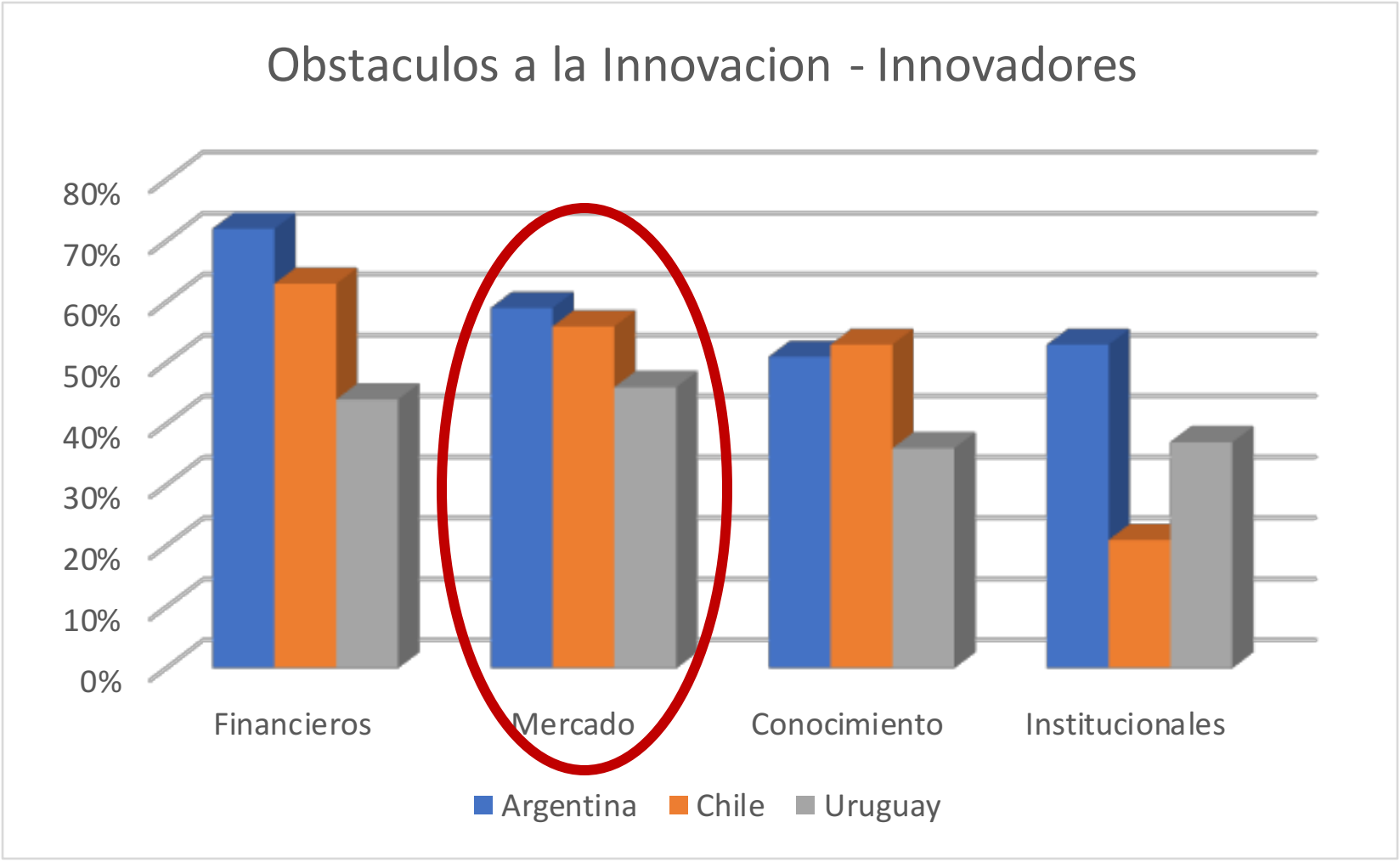
- **Von Hippel (86) suggests that pioneer consumers are central for the market success of an innovation (they signal functionality, demonstration effects, etc).**

- **Innovation surveys in OECD countries show that market barriers are even more important for innovation than traditional supply barriers such lack of financing, human capital, etc (Edler and Georghiou, 2007).**

- **Over the last years we observe an increasing interest by OECD countries on implementing demand side innovation policies (at least as we see it from LAC).**

We need two to dance Tango !!! ....

Market demand is vital for innovation….



….also in Latin America …..

Demand side innovation policies…..

- **At least three canonical rationales that justify innovation policies…**
- **(1) Knowledge has public good properties.**
- **(2) Information asymmetries limit access to finance and technologies.**
- **(3) Failures to coordinate complementary investments needed to innovate.**
- **Plus a high uncertainty that magnifies the above mentioned reasons.**
- **In general, all these "problems" affect both innovation supply (*originators*) and innovation demand (*users*).**

Demand side innovation policies…..

A taxonomy of innovation according to orientation and type of failure.

Target Failure	**Orientation**	
	Supply Side Designs	Demand Side Designs
Public Goods	Grants Scientific Research Centers of Excellence Grants Industrial R&D Tax Incentives for R&D STEM training grants	Sector S&T Funds Tax Incentives Adoption Adoption Grants.
Asymmetric Information (Financial)	Equity Support Loans and Guarantees	Tech adoption loans Tech adoption guarantees
Asymmetric Information (Diffusion)	Information diffusion Signaling Foresight	Technology Extension Demonstration Funding Diffusion Vouchers Quality Certification
Coordination	Tech Transfer support Tech Infrastructure Innovation Consortiums Grants for Joint R&D Innovation Vouchers	Licensing coordination Cluster Development Public Procurement Supplier Development Standards Setting Social innovation programs

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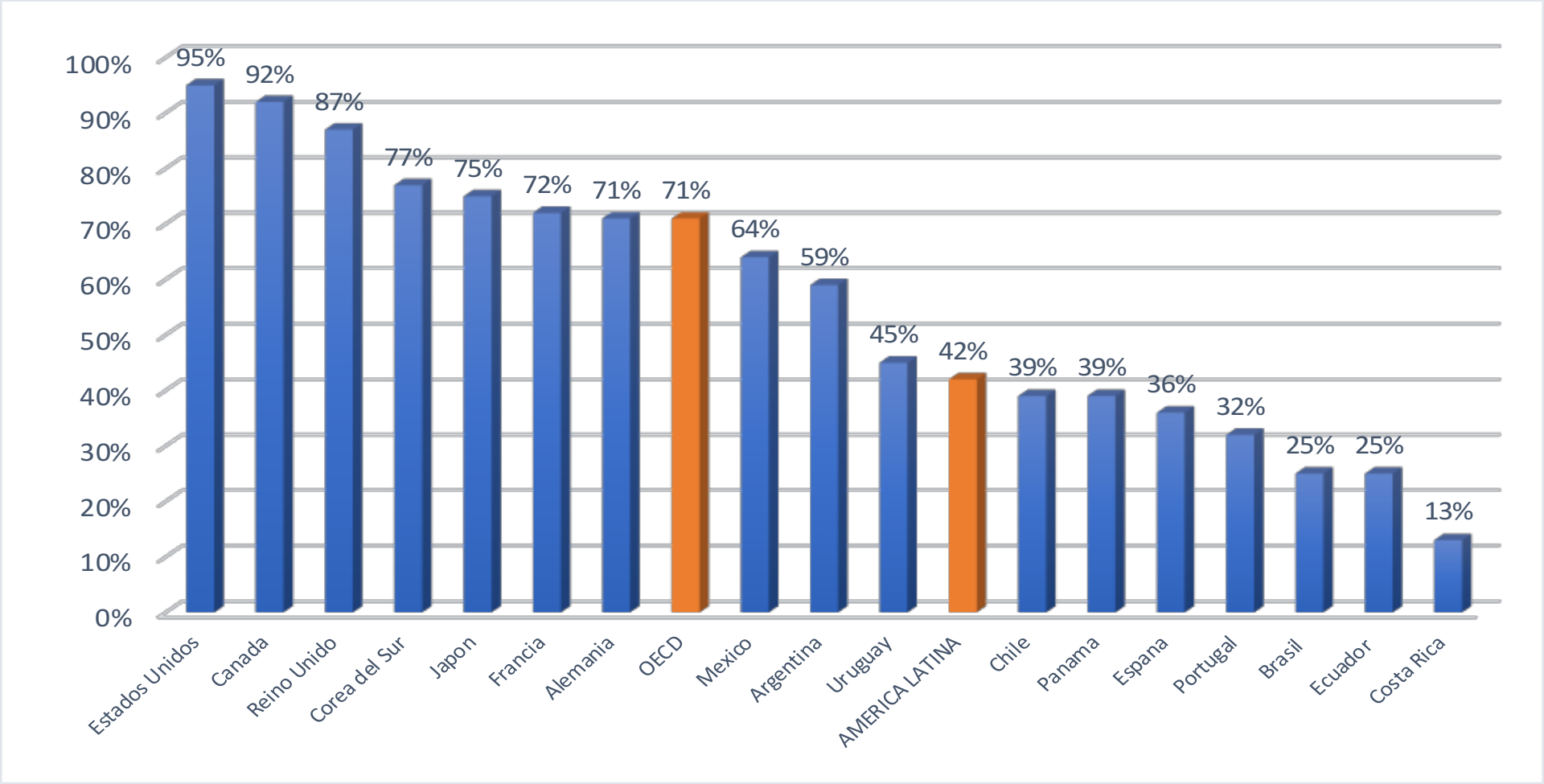
LAC: An Unbalanced Policy Mix….



- Source: Mowery (OECD) and RICYT for LAC (based on Mowery's methodology)

Mission vs. Curiosity Driven public funding for research…….

Why Public Procurement of Innovation (PPI)?

- Plenty of evidence that some of the most path breaking technologies are the result of public sector demand……

- Public sector demand on average between 10% to 20% of GDP in LAC

- However little systematic analysis of the situation in LAC….

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In LAC PPI is also gaining interest…

- PPI is increasingly important in the innovation policies debate but also within the debate about increase the efficiency of public services. This involves both national governments and multilateral organizations.
- At this time, several government have taken first steps in this direction either by building up policy frameworks for PPI and by starting pilot projects at sectoral levels.

<u>The IDB sponsored study covers: Brazil, Chile, Colombia and Uruguay:</u>

1. Revising capacities and advancements regarding the implementation of PPI policies.
2. To provide policy recommendations to move forward.

Why Public Procurement of Innovation (PPI)?

https://publications.iadb.org/handle/11319/7972

Building blocks of a PPI Policy

1 Framework Conditions	• Definition of PPI policy with objectives and goals. • A PPI friendly Public Procurement framework.
2 Organizational Capabilities	• Formation of specialized human resources in the public sector. • Development of capabilities in the private sector. • Preparation of guidelines and help desks within the public sector.
3 Identification, specification and communication of needs	• Roadmap studies and early demand planning. • Market consultation platforms for user-producer interactions. • Use of pre-commercial procurement to signal solutions.
4 Incentives to purchase innovative solutions	• Functional specification in tenders. • Guarantees. • Dedicated financing for forward commitment procurement, etc

Based on (Georghiou, Edler, Uyarra, & Yeow, *Policy instruments for public procurement of innovation: Choice, design and assessment*, 2014)

PPI in LAC: Framework conditions

1	Brazil	• There is formal legislation for PPI (Lei do Bem, Compre Brasil, etc) establishing a 25% preferential margin for products developed with domestic R&D. Flexible procurement regimes in state enterprises and defense.
2	Uruguay	• Public Procurement for Development Law, Program for Public Procurement for Science, Technology and Innovation Development. • Special procedures established in art.34 of TOCAF.
3	Colombia	• Law 1286/2009 for contracting STI activities.. • Law 1508 for PPP • Green Public Procurement Program.
4	Chile	• Sustainable Procurement. • Guidelines for life-cycle valuation for energy eficiency procurement. • Strong PPP framework for PPI.

Basado en (Georghiou, Edler, Uyarra, & Yeow, *Policy instruments for public procurement of innovation: Choice, design and assessment*, 2014)

PPI in LAC: Organizational Capabilities

1	Brazil	• Ver low. High risk aversión by public procurers. Except in oil and gas where Petrobras has the largest R&D center in Brazil.
2	Uruguay	• Experience by ACCE as a help desk for procurers. Pilot program on sustainable procurement. • DINAPYME provides technical assistance for SMES that want to supply the public sector. Experience in structuring PPP projects.
3	Colombia	• CCE directive 6 summarizing procurement of STI activities. • Inclusion of PPI in the National Development Plan. • Development of a PPO policy (in process)
4	Chile	• Chilecompra's initiative to strength capacities for PPI. • MINECO interest to lead a PPI policy. • Recent work by the GOBLAB in the identification of public needs. • Strong risk aversion by public procurers even in state enterprises.

Basado en (Georghiou, Edler, Uyarra, & Yeow, *Policy instruments for public procurement of innovation: Choice, design and assessment*, 2014)

PPI in LAC: Identification of Needs

1	Brazil	• No active program at the moment (Knowledge platforms program discontinued).
2	Uruguay	• Sectoral Funds ANII (Energy, Agro, Education, Health, Security, etc). AGESIC's E-Funds for e-government solutions. • Demand planning by AGESIC (Agenda Digital). • Innovation LAB by Montevideo Council– Smart Cities.
3	Colombia	• SCT National Programs • Ideas para el Cambio Program (a pre-commercial procurement) • Bio-similar Pilot with the Ministry of Health.
4	Chile	• Open Innovation Platform for Mining (CODELCO). • Pre-Commercial Procurement Pilots by GOBLAB (AULAB e Impacta Salud)

Basado en (Georghiou, Edler, Uyarra, & Yeow, *Policy instruments for public procurement of innovation: Choice, design and assessment*, 2014)

PPI in LAC: Incentives

1 Brasil	• 25% preferential margin for products developed with domestic R&D. • Suppliers development program in oil and gas, aerospace and health.
2 Uruguay	• PPP platform a CND • Market reserve and preferential margins by Law but not enacted. • Successful cases in state enterprises (renewable energy)
3 Colombia	• Without definition.
4 Chile	• Without definition.

Basado en (Georghiou, Edler, Uyarra, & Yeow, *Policy instruments for public procurement of innovation: Choice, design and assessment*, 2014)

In summary…..

- **Despite increasing interest, the current situation of PPI in LAC is very incipient……..in most countries PPI is not part of the innovation policy mix….although…**

- **There are *some* countries that have formal PPI regulations (e.g. margins of preference, market reservation, local content, PPP, etc) in their public procurement frameworks (Brazil, Uruguay) ….but with scarce *overall* implementation.**

- **Some countries have initiated processes of PPI policy building-up (Chile and Colombia).**

- **However, interesting cases can be found at the sectorial level!!!**

Successful case studies....

The case of Renewable Energy: Uruguay

- **Renewable Energy Program (2008): To transform the energy matrix heavily dependent on Oil and Gas imports (70% of supply).**
- **Plan backed by all political parties: Adapted the PPP model to the energy market to reduce financial risks.**
- **The Division of Energy became a think tank with more than 70 specialists (7 before) trained abroad in renewable energy markets issues.**
- **A lot of technical problems to be solved (e.g. tariff framework linking hydro with wind, adapting the grid, NR maps, etc). Established an I+D sector fund with ANII (national innovation agency)→funded mission oriented research.**
- **Local content policy, with technology transfer contracts. Price linked to local content (minimum 25%, excluding civil works).**
- **Critical: The demand command of the state owned enterprise (SOE) electricity distribution company (distribution monopoly).**
- **Results: 86% of energy supply is renewable. Industrial capacity with 50,000 jobs. 35% of local content in wind and 60% in biomass achieved →Service exports to Chile and Argentina. 150 researchers active in the sector.**

The case of Satellite Technologies: Argentina (*)

- CONAE was established in 1991 to implement a national space policy. Formely in Foreing Affairs, currently an agency of the Ministry of Science and Technology.
- Since 1996 several projects were developed all of them with PPI components (SAC B, SAC A, SAC C, SAC D Acquarius, Tronador, SABIA-MAR, SAOCOM)
- Examples of PPI: eletronic components, design and testing, structural components, optical devices, software, design of the mission control center, injectors,etc.
- New: Joint call of MINCYT, CONAE and INTA to develop mission oriented applications to make use of the satellite information.
- One of the 11 countries with capacity to deliver satellites in orbit. More than 1,500 people work in related local industry in 50 technology intensive SMEs.
- (*) CIECTI (2015)

Lessons Learned: Key Enabling Factors

- **The existence of an innovation friendly procurement regulatory framework separated from regular procurement rules (for example PPPs, SOE or decentralised agencies with own procurement rules, local content) allowing for flexibility and interaction with suppliers.**
- **Strong engineering and technical capabilities on the demand side (public think tanks or SOEs have driven these processes on the demand side).**
- **Intensive use of pre-commercial procurement to solve regulatory and engineering problems with heavy (but recent) involvement of national innovation agencies (sectoral funds figure).**
- **Purchase of solution through long term supplying contracts with SOEs or decentralized agencies.**

Lessons Learned: Key Challenges

- **It has been very difficult to mainstream to other sectors (lack of political leadership, procurer with legal training only, heavy oversight system, lack of demand planning, risk aversion on the procurers side, etc).**
- **Confusion between local content and *innovative* local content (bias towards import substitution more than innovation).**
- **Steady progress limited by lack of capabilities on the suppliers side (mismatch between demand needs and suppliers capabilities) → complementary policies are needed.**
- **Innovation demand side policies require PDP policies in the background.**

The Way Ahead

- **Build *institutional leadership* and *networks* (make someone – CPB, Ministry, etc) responsible and accountable for policy.**
- **Guarantee sustained support (entrepreneurship, social innovation, sustainable energy, e-government are consensus areas in LA).**
- **Exploit flexibilities of the current legal framework before going for a full reform (in the long run) (SEO, PPPs).**
- **Starting with few small scale and low complexity pilots to learn for policy desing (as done in Colombia) might be good strategy.**
- **Strenghtenign public-public and public-private coordination through specific instruments (Joint duty program or clusters).**
- **Financial incentives but also for training and capacity building (both in private and public sectors). Starting from PCP in innovation agencies might be good start.**
- **Monitoring and evaluation.**

Thank you!!!