Discovery-oriented industrial policies: could they be adopted in Portugal?

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contents

- The return of industrial policies
- The need for new a new approach to industrial / innovation policies
- Discovery-oriented policies
- Exploring and operationalising discovery-oriented policy processes: the research approach
- Key insights:
 - what needs to be discovered
 - why use discovery processes
 - How is it to be discovered
 - policy capacity
- Conclusions
- Recommendations

The return of industrial policies

- Erosion of the social acceptance of globalisation in some advanced economies,
- Reduction in greenhouse gas (GHG) emissions Green Industrial Policies
- Covid-19 and resilience considerations
- Place-based strategies fostering a more equitable economic development
- National security and geopolitical considerations e.g CHIPS and Science Act in the US; strategic autonomy in the EU

See: Hausmann and Rodrik, 2003; Rodrik, 2008, Foray et al., 2009, Aghion et al., 2011; Radosevic, 2017; Renda, 2023; Mollica, 2024

The need for a "new" approach to industrial / innovation policies (1/4)

In Europe and in Portugal Cohesion Policy is used as a testing ground for a proxy of new industrial policy known as smart specialisation strategies or S3s

ERDF R&Di funding instruments does not induce behaviour changes, therefore it is difficult to see **how ERDF** R&Di **funding alone contributes to "untrap" regions caught by the "the development trap"**

- Induces de-risk strategies
- Does not push innovation to zones of higher risk /reward
- Higher participation of large firms may counteract derisking, but instruments for SMEs should induce behaviour change

Diemer, Andreas and Iammarino, Simona and Rodríguez-Pose, Andrés and Storper, Michael, The Regional Development Trap in Europe (June 2022). CEPR Discussion Paper No. DP17371,



The need for a "new" approach to industrial / innovation policies (2/4)



POLICY

No shortage of funding instruments

BUT

Unbalanced use, Biased towards resouce-input.

Do not target behaviour change. **Trapped in low risk** incremental Improvements

"the development trap"

Resource - Input

Behaviour change

The need for a "new" approach to industrial / innovation policies (3/4)



What current practices of supported innovation deliver?

Enlarge the focus of support ? Need a new focus on:

behaviour change

systems change

"Challenge-led" or mission oriented policy

Transformative innovation policy

The need for a "new" approach to industrial / innovation policies (4/4)

• Frame 1 - 1960s/80s R&D and regulation

"Science leads to immense social benefits" Vannevar Bush, Science the Endless Frontier. The linear model supported by neo-classical market failure rationale for public funding

• Frame 2 – 1990s/today National/Regional innovation systems

Linkages and systems. The Innovation System Paradigm as the basis for policy, but with concerns for accountability, evaluation, clear priorities, higher selectivity, encourage industrial innovation

• Frame 3 – emerging ... Transformative Innovation Policy

Shot and Steinmueller, 2018

Discovery-oriented policies (1/5)

 To be effective (new) industrial policies require policy makers to have extensive knowledge about specific problems in their own contexts, which in most cases is impossible to obtain.

 Hence, industrial policies need "self-discovery" of "what one is good at producing", "listening mechanisms", "flexible response processes" ...

See: Haussman and Rodrik 2003; Chang and Andreoni, 2020; Andrews and Harrington, 2023

Discovery-oriented policies (2/5)

- "Polices are not to be top-down designed by experts, consultants or inside cabinets
- Instead they are to be designed and implemented as collective policymaking processes (which have been named "self-discovery", "entrepreneurial discovery" ...)
- i.e. designed and implemented through truly participatory process (not just participated!)

Discovery-oriented policies (3/5)

- What is the discovery about? What needs to be discovered?
- In S3 and Cohesion funding is about defining R&D and innovation priority domains to concentrate efforts on projects and activities leading to industrial structural change ...
- More broadly ... is about "what one is (could be) good at producing"

Rodrik, Haussman Foray et al., 2009, 2011

Discovery-oriented policies (4/5)

 However "Discovery" is a mechanism needed to address wicked problems – such as policies which aim to address industrial structural change

 Why ? From systems thinking and complexity science, we know that "Complex Systems" are dispositional not causal i.e. thet have no predictive causality. Evolve through "emergent innovative behaviour"



Discovery oriented policies (5/5)



- "discovery" is therefore as a mechanism to break the lock-in and promote niche innovation
- "discovery" also associated to the policy processes, themselves through EPEs -Experimental Policy Engagements

Exploring and operationalising discoveryoriented policy processes: the research approach

- Interviews with 5 regions
 - Catalonia Spain,
 - Dalarna Sweden,
 - Emilia Romagna Italy,
 - Northern Netherlands Alliance Netherlands
 - Västerbotten Sweden
- Key insights: Why, What, How are regions using "discovery processes"?
 Policy capacity needed

Key insights: why use discovery processes

- Follow up from previous practices
- Because the policy-problems are perceived as "complex" societal changes that may take 20 or 30 years to accomplish, and there is the perception that these problems cannot be tackled by "traditional" policy-strategy formulation, but require, "discovery"
- Policy makers referred to a "transformer mission" approach and the need to involve a wider set of stakeholders

Key insights: what needs to be discovered

- Policy (problem) discovery going from general, broad societal challenhes to local specific, placed-based "transformational goals", "shared agendas" or "common goals",
- But not set as precise goals but as "future landing-zones"
- "top-down alignment" i.e. a focus on regional and multi-level government coordination, which nevertheless seeks to open up the process to wider participation of the local communities

Key insights: what needs to be discovered

- System discovery knowing who is who, who is interested in the challenges, who is doing what
- Knowing what is already going on and how to enhance collaboration, i.e. identification of "pockets of the future found in the present"
- The "system" to be discovered (object of change) is a sector, cluster and all associated public and semi-public support infrastructures e.g. technology and education

Key insights: **how** is it to be discovered?

- Implementation remains an **emerging experimental practice** and a challenging prescription for the regions
- There is no "one way" to start the discovery process. In general regional authorities "own" the problem, initiate the process.
- Implementation relies essentially in regular meetings, workshops or "innovation camps", "policy labs"
- Implementation has risks of "challenge-drift". Top level politics. Dominant regional actors taking control of the process

Key insights: policy capacity

- Not just government or policy capacity. Capacities for "systems level" transformation are needed in agencies, intermediaries private sector, all actors involved
- "Facilitation", "communication", "ability to adapt", "creativity" ...
- Universities may have an important role in helping to capacitate the actors by setting "action research" initiatives, "policy labs" to support policy experimentation and discovery following up and monitoring of the systems change processes.

Conclusions

- Industrial policy making processes in some EU regions are turning to flexible discovery mechanisms and using different types of listening mechanisms
- However, these new discovery-oriented policy practices require explicit use of experiments with the intention of policy-learning and identification of "emergent behaviours"
- Absence of such policy experimentation may suggest that the "moonshot" approaches fuelled by ERDF funding dominate ?
- There are visible results in "shielding" the agendas from short-termism which suggests current discovery-oriented industrial policies focus on "building and nurturing niches"

Policy recomendations

System thinking	 Understanding of system boundaries Deeper analysis of system values and beliefs Space for iterative double/triple loop learning
Policy experimenting	 Set up of policy experiments for learning what works Use of impact hypothesis and agile projects portfolio approach
Social technology tools	 Enhance the quality of the participatory process Help to mitigate resistance and to expose the existing controlling structures
Monitoring, learning and evaluation	 Reoriented to detect early signals of emergent behaviours in the system Use monitoring to revise agendas, roadmaps and Theory of Change
Capacitation	 Use "learning networks" and communities of practice Form partnerships with local universities



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