

RISIS – Sixth Policymakers session – 3 December 2020

SPEAKING NOTES:

some thoughts referring **mainly to the policy implications** (see also Annex), of the following [sixth Issue of Policy Brief](#)

by P. Moncada-Paternò-Castello,¹

1. Premise

Very good manuscript, which touch several key topics of the European innovation system and related policies. It is based on interesting data and analyses.

2. Main points for policy discussion. Ref.: Brief' Policy implications

- a. **Authors suggest:** Policies should go beyond generic instruments (e.g., tax credits in favour all national subsidiaries), as large multinational firms represent 80% of innovations and play a role for the overall dynamics of territories. Authors argue that policies focused on small and start-up firms in the last decades have overseen the role of large firms.

My 1st discussion point: I agree that large companies disproportionately contribute to innovation (at least innovation as proxies by patents). BUT small and start-ups have many other means to innovate and to protect their intellectual property, since they are often involved in business models innovation than in technological innovations (see the example of Uber, it is a business model innovation that relays on a technological innovation, namely the GPS, or the example of iPhone with touchscreen).

My 2nd point of economy and policy discussion is on the role of new, and innovative firms: New sectors / new structural dynamics: role of new/smaller innovative firms is CRUCIAL (Schumpeterian Mark I model applies). The youngest sectors in the last 20 years are all high-tech (semi-conductors, Internet, 'Software' and 'Biotechnology') and all launched by a large extent by new/smaller innovative-companies², which indicate the key role of entrepreneurship, creativity and the flexibility of new/young firms to create/early enter, compete and grow in new knowledge-intensive sectors.

The 3rd discussion point, linked to the previous, is that from an economic ad policy of innovation view point, the employment impact of the high-growth start-ups is enormous; the problem is that here again rules the *power law* (or Pareto) as only a small fraction of start-ups are responsible for the overwhelming majority of employment growth. For example, there is evidence that innovative and high-growth young companies contribute to more than half output and employment growth in the US.

¹ European Commission – Joint Research Centre – Growth and Innovation Directorate.

² See Moncada-Paternò-Castello (2016)

<https://iri.jrc.ec.europa.eu/sites/default/files/contenttype//publication//workingpaper//1568811278//WP6-2016%20Sector%20dynamics.pdf>

Therefore, we need policies, which ensure the good combination of innovative large and small, multinational and national companies - and possibly their fair collaboration – as keys factors for a more dynamic innovative & sustainable industrial sector in the EU.

- b. **Authors suggest:** Large innovators (large multinationals) are located on a limited number of metropolitan territories in the EU (top 100 metropolitan areas represent 80% of total innovations of large multinationals). How to combine the support international competitiveness of these territories with the inclusion and access to knowledge for all territories? Or should we leave territories their own strategies?

My 4th policy discussion point: I agree that provide essential elements of technology innovation to all territories for their improved welfare is a key policy issue.

I do not think that, in this context, to elaborate further on EU policies to make the mentioned 100 metropolitan areas even more internationally competitive is so crucial.

The real important issue here is the inclusion of all territories, especially the lagging ones, to the access of *knowledge*, to improve *entrepreneurship* capacity and to the territory ability of *specialize* to compete.

Knowledge and entrepreneurship:

We know that metropolitan areas are beneficial to build good start-up ecosystems, but many innovative start-ups ecosystems are clustered around world-class universities (Technion in Tel Aviv, Stanford and Berkeley in Silicon Valley, MIT in Boston, etc...). Furthermore, we know that multinationals are moving their R&D operations especially where they found talented R&D personnel /advanced R&D knowledge, from our JRC-IRI survey.

Box on earlier *acqui-hiring* and knowledge and economic concentration of large international innovators

The “acqui-hiring” is a very interesting phenomenon, because talents are rare resources and the digital giants are often more interested in harnessing (tapping) the startups' talent pool (that is why the word acquiring combined with hiring) than in their innovative product or services (see also Coyle et al., 2013). For example, Google acquires almost every week a start-up, and probably not always for their innovative products but for the talents of the start-ups.

Linked to the above “acqui-hire” phenomenon, in recent years large companies tend to acquire young innovative companies earlier compared to the past 10-20 years.

This can explain their increasing role as international innovators but also cast a shadow on “concentration” of technological & economic power, which is relevant for policy.

Smart specialisation for innovation transitions is one good policy strategy to take into consideration. It can fit for turning EU investment into local jobs and sustainable prosperity, helping all regions and cities to benefit from the new EU policy agenda - the European Green Deal, which focuses on the twin green and digital transition in line with the UN Sustainable Development Goals. New to consider - towards sustainability and the new economy - are the refinements of all components of smart specialisation.

Box on Smart Specialisation and the POINT methodology

Conceived within the reformed Cohesion policy of the European Commission, *Smart Specialisation* is a place-based approach characterised by the identification of strategic areas for intervention based both on the analysis of the strengths and potential of the economy and on an Entrepreneurial Discovery Process (EDP) with wide stakeholder involvement. It is outward looking and embraces a broad view of innovation including but certainly not limited to technology-driven approaches, supported by effective monitoring mechanisms. (<https://s3platform.jrc.ec.europa.eu/>)

Projecting Opportunities for Industrial Transitions (POINT) methodology has been jointly developed by JRC is a methodology to gather evidence, in a resource-efficient and timely manner, that allow for holistic planning, enable within government coordination and broad stakeholder mobilisation (<https://s3platform.jrc.ec.europa.eu/industrial-transition>)

- c. **Authors suggest:** Policies should look at ways for opening more widely knowledge policies to all actors present in the territories, and not only to national or European.

My 5th policy discussion point: EU should be careful to get there the right picture (as covered by the analysis presented today) in hand, and choose the right balance in such proposed policy strategy.

In fact, the number of patents *invented* in a country/region/metropolitan area may be very different from these *owned* by local companies³. In other words, in many EU countries, a high proportion of local inventions are owned by foreign companies.

Germany and US companies are the most frequent foreign owners of patents invented in EU countries.

Concentration of patents across companies changes a lot from one country to the other.

Differences between *inventors* in a given territory and *owners'* locations and country specificities should be considered by analysts and innovation policies.

This picture can allow to better elaborate policies to address the EU gap of knowledge creation and technology diffusion.

Box on patent inventors, owners and exploitation capacity

On one hand, *exploiting the patented technology can be profitable for a patent inventor holder of the first inventor country to share the exploitation of the technology with other international companies in exchange for licensing fees.*

On the other hand, *the inventorship patent portfolio of some EU country, region or metropolitan area faces structural difficulties to reach the full opportunities that patent valorisation may represent.* Such difficulties undermine in particular the potential valorisation of the patented technology and related socio-economic development in the geographical areas where inventor holders are based.

EU policies should aim to enhance effective support to patent valorisation taking better into account the characteristics of the national/regional/local ecosystems of innovation by, including measures like the following

- Financial support to technology development,

³ For example in Romania patents by local applicants (firms with headquarters located there) are 85% less than those by foreign owner inventors (Vezzani et al. 2019 - [link](#))

- Promotion of best practices, and
- Setting-up territorial services in close cooperation with other local public service providers.

Furthermore, the COVID crisis has also alluded to technological interdependencies across countries, where political decisions need to maintain a **careful balancing act**:

We are convinced that Technology sovereignty and the openness to global collaboration must go hand in hand: i.e., the EU should aim at a '**open strategic autonomy**'⁴, as recently expressed by Commissioner Margrethe Vestager.

Thank you for your attention!

Reading suggestions:

EC/JRC-OECD reports

2019

- [World Corporate Top R&D Investors: Shaping the Future of Technologies and of AI](#)

2017

- [World Corporate Top R&D Investors: Industrial Property Strategies in the Digital Economy](#)

2015

- [World Corporate Top R&D Investors: Innovation and IP bundles](#)

EU/JRC publications

2020

- [Quantifying and modelling industrial and commercial land-use demand in France](#)

2019

- [Technological innovation activities in the EU: A new perspective](#)

2018

- [How to survive an economic crisis? Lessons from the innovation profiles of EU regions](#)
- [EU regions and the upgrading for the digital age](#)
- [Do firms publish? A multi-sectoral analysis](#)

More on the EC/JRC work on Innovation and growth:

- <https://ec.europa.eu/jrc/en/science-area/innovation-and-growth>
- <https://iri.jrc.ec.europa.eu/home/>

⁴ <https://carnegieendowment.org/2020/04/30/covid-19-euand-u.s.-responses-event-7320>

ANNEX

5. POLICY IMPLICATIONS

These results suggest that it would be useful to open a **debate** on the framing of **research and innovation policies**, specifically around three central questions.

First, these policies have been focused over the last decade on **small and start-up firms** and have largely overseen the role of large firms. This raises strong questions when observing that these few large multinational firms represent **80% of inventive activities**. We should ask whether these firms are 'anchor tenants' that play an important role in supporting the **overall dynamics of territories** and whether policies should go beyond **generic instruments** (such as research tax credits that apply to all national subsidiaries).

Secondly, these firms are located in a limited number of territories. In **Europe**, where the activity is far more distributed than in the other continents, **the top 100 metropolitan areas** represent also **80% of total LMF inventive activities**. There is thus clearly a notion of the critical size that renders these territories attractive. And this raises a **second policy question**, especially important, if we consider that knowledge has become a critical feature of growth: How can we combine **support to the international competitiveness** of these territories with the objective of **inclusion** and equal **access to knowledge** for all territories? Does it require an overarching framing policy, or should we leave territories to develop their **own strategies**?

Third, only half these large firms are **national** (while de facto core development policies remain national), the other half is split between European and 'non-European' **multinational firms**. And this is true for all types of metropolitan areas in Europe. Being transversal to all, it might be interesting to look at ways for opening more widely **knowledge policies to all actors present in the territories**, and not only to national or European actors.

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