

## INNOVA Measure Workshop: **Innovation, high-growth and internationalization of R&D**

Jointly organized by JRC and RTD  
28 November 2017, 10:00-16:30  
Brussels, CDMA building  
(Rue Champs de Mars 21) 06/144

### Summary of presentations

#### Session I: Internationalization of R&D

**Davide Castellani** introduced the session by discussing descriptive evidence of the changing geography of inventive activity and the role of MNEs international R&D activities. He highlighted that ‘local buzz’ is crucial for the development of knowledge in local economies, and it leads to persistence in innovative activities. Moreover, ‘global pipelines’ are also becoming a crucial element for the successful development of local knowledge. He illustrated recent developments with evidence on the extremely large increase in the concentration of regions contributing to global patenting, as well as in international collaboration in patenting. The talk stressed the role of path-dependence in innovation, showing that although the hierarchy of the top patenting regions is not immobile, the propensity to patent is quite dependent on previous innovation. For further details on many of the aspects touched upon in the presentation, we refer to [this working paper](#).

**Bernhard Dachs** discussed three trends in internationalisation of business R&D that emerged in recent years. First, R&D funding in the form of tax incentives may have a stronger influence on location decisions in the future. Tax incentives for R&D favour large firms in particular. These incentives have increased in the majority of OECD countries. Second, service firms are new important players in R&D internationalisation, and drive it to a considerable degree. However, data on overseas R&D by service firms is only available for a limited number of countries. Third, emerging economies, including China and India, gain prominence in R&D internationalisation. Their share, however, is rising slower than many assume, and Europe still hosts the majority of R&D activities of US firms abroad.

**Giacomo Damoli** discussed [determinants of FDI in R&D](#) across Europe, and presented a research project currently ongoing to expand evidence and findings at the global level. He showed that FDI directed to European NUTS2 regions with the purpose of absorbing knowledge were more hardly hit

by the crisis than those aiming at expanding market, arguably in reason of a greater riskiness embedded in the former rather than latter type of projects. Moreover, FDI in the ICT services industry aim relatively more at expanding their market as compared to FDI in manufacturing industries, which are conversely more inclined to absorb knowledge. The talk was concluded with some ideas on how to assess the competitiveness of regions in different macro-areas world to attract knowledge-intensive investments.

**Sara Amoroso** presented several recent studies from herself and her work team at the JRC in Seville. She first presented a [study](#) showing that different factors play a substantially varied role in attracting (or deterring) FDI in production and knowledge-intensive FDI. The results indicate, in particular, that a “race to the bottom” of labour standards (i.e. low Collective Bargaining Coverage, low labour adjustment costs) attract only manufacturing FDI, while high quality infrastructure and human capital play a crucial role in attracting knowledge-intensive investments. She then presented a [study](#) that provides evidence on the positive effects of knowledge-intensive FDI on the entrepreneurship of destination countries in Europe, in particular in the more dynamic and R&D intensive industries. She also summarised the key messages of research about [property strategies of top R&D investors in the digital economy](#), [the effects of “multinationality” \(i.e. being a multinational company\) on firm productivity](#), and [R&D and innovation across the global value chains](#). Sara’s agenda for future research includes studying the different role of FDI from third countries on European firms’ competition and R&D activities as well as the different modes of knowledge flows and transfer across regions.

## **Session II High-growth, innovative enterprises**

**Stefano Bianchini** introduced the session through an overview about the biggest research and policy challenges related to the study of firm-industry dynamics, high-growth, and innovation. After a quick summary of the main robust “stylized facts” on high-growth firms, the discussion is focused on the complex micro-level relationship between innovation and high-growth performance. It identifies the sources of this complexity, being both the multidimensionality of the innovation and growth processes, and the technical issues to disentangle the causal effect of innovation on firm performance. There has been for long a tendency to oversimplify the link between innovation and growth, typically by sequentially relating one innovation input, to one innovation output, and this output to growth performance. But innovation is much more than this; it encompasses indeed a large number of activities and emerges as a highly complex, non-linear multidimensional process composed of many stages. Accounting for this complexity is therefore of paramount importance and should become a priority in studies of the nexus between innovation and growth. It is argued that one way to account for complexity is to consider “innovation strategies” as the source of high-growth performance. Firms develop innovation strategies by combining several innovation activities, by sourcing for knowledge and information along the value chain, interacting with the external environment, and facing obstacles that prevent them to be successful. More research is needed to understand how firms combine different innovation modes, what types of complementarities exist, and how firms overcome their obstacles. Furthermore, more theoretical and empirical research is needed to understand what factors (i.e., industry, age, institutional framework) can moderate the relationship between innovation and high-growth. Virtually all the literature on firm growth focuses on “success stories”, trying to understand the dynamics that lead a business to become a high-

growth firm. It is proposed that high decline firms are an equally, though understudied, object of research. Many firms innovate but instead of growing they do shrink, losing market shares and destroying jobs. Understanding the causes underpinning these dynamics becomes another challenge the scientific community needs to deal with. Finally, a discussion on what are the good public policies to support high-growth firms is proposed. While there has been a tendency to provide policymakers with very broad and vague suggestions, often focused on “what not to do” instead of “what to do”, since few years there is intense debate on how these policies should actually be design. Some approaches are therefore discussed, in particular: pros and cons of “technology push” vis-à-vis “market pull” schemes, balancing between support to SMEs and large organizations, how to increase leadership skills, how to anchor high-growth firms to the local economy, and how to customize and shape policies to the peculiarities of an economic and entrepreneurial eco-system.

**Dániel Vértesy** presented the [outcomes of the study](#) conducted in the framework of the INNOVA Measure II project, which examined Community Innovation Survey (CIS) data to gain new evidence on high-growth, innovative enterprises (HGIE) in Europe. Such firms are a key source of business dynamics, but little is known about their actual share in the enterprise population. This is due to an inherent uncertainty in how to distinguish high-growth firms from non-high-growth ones. The study showed that the share of HGIEs in Europe ranged between 0.1 to 10% depending on the adopted definition. Country- and sectoral-level indicators revealed a trade-off between high-growth and innovation performance at the country-level (differently than at the sectoral level), highlighting the importance of structural differences across EU Member States in terms of firms’ innovation profile, size and associated high-growth performance.

**Maria Del Sorbo** presented initial results from the ongoing study carried out at the JRC within INNOVA Measure III which aims at systematically collecting statistical evidence to improve the comparability of the EU28 and the US in terms of different measures of business demography and firm performance (i.e. births, deaths, churn rate, survival, scale-up and high-growth, etc.), where possible, broken down by main sectors and size. The study dedicates special attention to clarify differences in the perimeter of the business enterprise population and the definition of enterprises (i.e. employer vs. non-employer) used in different data sources.

**Claudia Ghisetti** discussed the relationship between firms’ strategies, obstacles and their related growth and innovation outcomes. The main results of the analysis conducted within INNOVA Measure II, [published in this report](#), are that the strategy of reduction of costs of operation does not reward, by contrast, firms pursuing a strategy aimed at improving flexibility and responsiveness grow faster. As for the obstacles, firms that perceive the obstacles of the lack of demand and of the lack of adequate finance are hampered and perform worse in both economic and innovation outcomes, whereas firms that perceive the lack of qualified personnel as an important obstacle grow more. Specific findings are outlined for high-growth enterprises: those are less sensitive to financial constraints for both growing and innovating and benefit more from strategies aimed at building alliances. Based on the latter finding, she presented the preliminary analysis of the **ongoing research** conducted in the framework of the INNOVA Measure III project, aimed at unveiling whether (and how) performing an open innovation mode (to which the strategy of building alliances belong) impacts on economic growth. The analysis is conducted at the aggregate sectoral level on multiple waves of the Community Innovation Survey and, although preliminary, seems to depict interesting

results: open innovation components are beneficial for sectoral economic growth. She concluded by outlining the future research direction of this work.

**Flavio Calvino** presented ongoing work joint with Chiara Criscuolo at the OECD Directorate for Science, Technology and Innovation on the digital transformation and its implications for business dynamics. Motivated by the current debate on digital technologies affecting the cost of entry and the potential/need for post-entry employment growth, the presented work focuses on the analysis of the role of digitalisation for business dynamism across countries and industries. Measures of digitalisation, at industry level, build upon wider OECD work and focus on five key dimensions that aim at capturing the extent to which the digital transformation affects i) organisational change, ii) markets and competition, iii) the labour force, iv) capital and other intermediate inputs, and v) automation. Different measures of business dynamism (e.g., entry rates, churning rates, average size of entrants, etc.) are sourced from a newly collected cross-country harmonised and representative database on employment and business dynamics, the OECD DynEmp3 database. Descriptive statistics and first econometric results are presented, confirming that the digital transformation is a complex phenomenon and that it is important to consider its different dimensions. The analysis appears to indicate two sides of digitalisation, depending on the indicators considered. On the one hand results show the existence of a positive role of digitalisation for business dynamics for many of the dimensions analysed. On the other hand, they also show that some indicators of digitalisation (mainly those associated with automation of tasks and with a higher share of turnover from digital markets) seem to be associated with lower business dynamism. The next steps of analysis and the ongoing complementary work are finally discussed.

**Fiammetta Rossetti** outlined key outcomes of various recent work carried out with Daniel Nepelski and Vincent Van Roy on the topic of Entrepreneurship and start-up/scale-up firms in Europe. An investigation on the [determinants of high-tech entrepreneurship in the EU](#) revealed that while Europe is specialised in low-medium technology activities, high-tech – especially digital – firms are conducive to radical innovations. In order to [benchmark the conditions for entrepreneurship and scale-up across countries in Europe](#), two indices offer a ranking of EU Member States based on seven dimensions. Finally, a study on top worldwide venture capital landscape mapped the evolution of EU cities among global hotspots, and highlighted the importance of finance as a key enabler of entrepreneurship.