

Highly skilled migration and the internationalization of technology



Background.

TKC is a theoretical and empirical project, whose deliverables will consist in research

papers and open access datasets. The project is articulated in six work-packages (WP), taking a complementary approach between the macro (country), meso (firm), and micro (individual) levels of analysis. WP.3 aims to understand the role of highly skilled migration (of scientists and inventors) on the internationalization of science and technology. More specifically, WP.3's objective is to shed light on whether the migration of scientists and inventors affect the flow of knowledge and technology exports, both from the host to the home countries of the migrants and vice-versa

What we have achieved.

WP.3 objectives were partially met in a recently accepted paper ("Inventor Migration and Knowledge Flows: a Two-Way Communication Channel?", by Ernest Miguelez and Claudia Noumedem Temgoua (World Bank), Research Policy - accepted). In that paper, we document the

influence of networks of highly skilled migrants on the international diffusion of knowledge – particularly those with degrees and occupations in science, technology, engineering and mathematics. We investigate knowledge inflows to host countries brought in by skilled immigrants. We then explore knowledge feedback to home countries generated by these migrants. We test our hypotheses in a country-pair gravity model setting, for the period 1990-2010, using patent citations across countries to measure international knowledge diffusion. Our results confirm our hypotheses on the positive impact of skilled migrants on knowledge flows to host and home countries. However, they are not robust to instrumental variables and country-pair fixed-effects, and only matter in certain contexts: when the sending countries are developing nations and for knowledge diffusion within the boundaries of multinationals.

What are we currently doing.

In a follow-up study ("The ties that bind...and transform: knowledge remittances, relatedness and the direction of technical change", by Valentina di Iasio (Insubria) and Ernest Migue-

lez), we investigate whether the existence of a high-skilled diaspora has a positive impact on the technological diversification of the countries of origin. Specifically, we analyze the role of high-skilled emigrant inventors as vectors of knowledge remittances. We focus the analysis on a sample of 137 countries of origin, with a special attention to developing countries, and 5 countries of destination: United States, Germany, Switzerland, United Kingdom and France. To take into account the uneven distribution of knowledge within the countries of destination we break down the analysis at the metropolitan area level. We also analyze how knowledge remittances and relatedness density interplay in shaping the diversification path of migrants' home countries. Our results suggest that the inventors' diaspora exposes the countries of origin to new technologies and has a positive effect on technological diversification, particularly in technologies with lower degrees of relatedness density, helping breaking path dependency.



TKC contributes to the 6th International PhD Workshop in Economics of Innovation, Complexity and Knowledge

Ernest Miguelez, as PI of the TKC project, was keynote speaker at the 6th International PhD Workshop in Economics of Innovation, Complexity and Knowledge, January 9-10, 2019, Turin, sponsored by the Young Scholars

Initiative of the Institute for New Economic Thinking (INET-YSI). Ernest gave an overview on the topic of migration and innovation, with a focus on measurement issues, and presented some of the project results of STEM workers' migration, diffusion of knowledge, and the internationalization of firms we are developing under the TKC project. Other keynote speakers of the workshop were Massimo Riccaboni (IMT, Lucca) and Giovanni Marin (Urbino). Ernest also represented the TKC team at the European Week of Regions and Cities, October 7-10, 2019, Brussels, at the panel Global Talents, Immigration Policy and Regional Innovation. The session explored ways in which European cities and regions can deal with issues such as the global competition for talent and the potential distributional consequences, by keeping borders open to global talents as well as addressing the fear and concerns of those who feel excluded by the benefits of high-skilled immigration. The roundtable also saw the participation of other academics, such as Cornelia Lawson (Manchester), Andrea Morrison (Utrecht) and Marte Solheim (Stavanger).



On July 4-5, 2019, Francesco Lissoni was keynote speaker at the 2019 India Conference on Innovation, Intellectual Property and Competition
 (<https://www.isb.edu/IIPC-2019>).

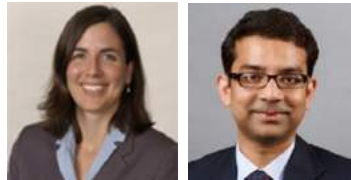
He presented an overview of recent work on migration by innovation economists, including the TKC itself. In his intervention, Francesco focused on the paper "Return migrants' self-selection: Evidence for Indian inventors" (NBER WP 24809), where we investigate the rate and determinants of return migration. Other keynotes of the conference were Bronwyn Hall (Berkeley) or Stuart Graham (Georgia Tech).

WORKSHOP SERIES ON MIGRATION, GLOBALIZATION AND THE KNOWLEDGE ECONOMY

On May 16-17, 2019, Utrecht (the Netherlands) hosted the second edition of the "Workshop Series on Migration, Globalization and the Knowledge Economy", organized by the Economic Urban Transitions (EUT) at the Department of Human Geography and Planning, Utrecht University, in a consortium including other institutions such as GREThA CNRS UMR 5113 at the Université de Bordeaux, ICRIOS research group at Bocconi University, CEPII, the Paris School of Economics (PSE), CDM at the École Polytechnique Fédérale de Lausanne (EPFL), the Gran Sasso Science Institute, and the Institute of Public Goods and Policies (IPP-CSIC). The Series consist on four workshops in as many cities. It started in Paris, November 28, 2018, which will be followed up in Utrecht (Spring 2019), Milan (Spring 2020) and Bordeaux (Fall 2020).

Ufuk Akcigit, from the university of Chicago, and **Ina Ganguli**, from the University of Massachusetts Amherst, were the keynote speakers, who talk about the contribution of foreign-born talent to US innovation and the knowledge flows these migrants brought into the country. Regular presentations looked at the contribution of immigrants to innovation and entrepreneurship, diversity and innovation, as well as the relationship between immigration and firm-level outcomes.

On May 18-19, 2020, the second edition of the Workshop Series will be organized in Milan, hosted by the ICRIOS at Bocconi University. We are glad to announce that **Megan MacGarvie**, from Boston University, and **Raj Choudhury**, from Harvard Business School, will deliver the keynote talks.



NEW PUBLICATION !

"Highly skilled and well connected: Migrant inventors in cross-border M&As" by Diego Useche, Ernest Miguelez, and Francesco Lissoni. *J Int Bus Stud* (2019). <https://doi.org/10.1057/s41267-018-0203-3>

TKC members just published an article at the Journal of International Business Studies on the relationship between skilled immigration and cross-border mergers & acquisitions. Based on a relational view of international business, we investigate the role of migrant inventors in cross-border mergers and acquisitions undertaken by R&D-active firms.

We hypothesize that the migrant inventors' international social networks can be leveraged by their employers in order to identify and/or integrate relevant knowledge bases of acquisition targets in the inventors' home country. We nuance our hypothesis by means of several conditional logistic regressions on a large matched sample of deals and control cases.

The impact of migrant inventors increases with the distance between countries and for targets located in countries with weak administrative/legal systems, as well as when targets are either innovative or belong to high-tech sectors or to the same sector as the acquirer, and for full versus partial acquisitions.

2020 Editors : Ernest Miguelez, Karine Onfroy (@KOnfroy)

MEET THE TEAM !



FRANCESCO LISSONI

> Professor of Economics at GREThA – UMR CNRS 5113, the «Groupe de Recherche en Économie Théorique et Appliquée» of Bordeaux

University (France), where he held the Chaire d'Accueil in Economics of Innovation, funded by the Regional Council of Aquitaine, as well, as a Chaire IdEx (Initiative d'Excellence).

> He is a longstanding Fellow of ICRIOS, the Invernizzi Center for Research on Innovation, Organization, and Strategy of Bocconi University (Milan, Italy). A graduate of the University of Manchester, Prof. Lissoni has also spent time visiting the Sloan School of Management (MIT) and the University of Melbourne.

> His research activity covers the economics of science, innovation adoption, intellectual property, university-industry technology transfer, the geography of knowledge diffusion, and highly skilled migration. He currently presides the Scientific Board of EPIP (European Policy for Intellectual Property) and consults for ANVUR, the Italian National Agency for the Evaluation of Universities and Research on Third Mission issues. He is advisory editor for Industrial & Corporate Change and Research Policy.



VALERIO STERZI

> Valerio Sterzi is Assistant Professor (Maître de conférences) in Economics at GREThA – UMR CNRS 5113, University of Bordeaux. He

received his Ph.D. in Economics and Management of Technology from the University of Bergamo (jointly Program with Polytechnic University of Turin) in 2009 when he was a junior fellow at Cespri, Bocconi University.

> His main research interests focus on economics of innovation and economics of patent. Currently he is studying the role of patent intermediaries and non-practicing entities in the patent marketplace, thanks to the NPEIE project (<https://npeie.org>) supported by the French National Research Agency (ANR-JCJC).