



Converging research streams on FDI localisation

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Castellani's research line

Exploring heterogeneity in location decisions

- Location decisions differ according to
 - Connectivity
 - Agglomeration economies
 - Their interdependencies

The impact of **connectivity** on location decisions differs according to:

- **International vs local** nature of connections
- **channels used to connect places** (transportation infrastructures, knowledge transmission channels, corporate links)
- **Business activities** (Value chains functions)

Agglomeration economies have a different impact on location decisions according to:

- **Internal and external** nature of agglomeration
- **Substitution effects** between internal and external agglomeration economies
- **How connected places are:** a strong connectivity may determine **temporary proximity effects** that moderate the benefit of agglomeration economies

Related research streams (I)

Gravity vs. connectivity

- Gravity like trade models emphasise the role of (geographic) **distance**
 - A source of transportation costs and uncertainty
 - A catch-all concept
- Extensions **from trade to FDI** and other crossborder activities
- Going **beyond geographic distance** to include **institutional factors**
- The impact of distance factors on location decisions **differs** according to
 - Material/immaterial nature of cross-border activities
 - Codified/tacit nature of knowledge being transferred across borders

Connectivity vs distance

- **Connectivity** has been conceptualised as a means to **overcome (geographic and institutional) distance**
- **Is it just a matter of using different words to express the same (or similar) concepts?**

Pros of focusing on connectivity rather than distance:

- **Expanding frontiers of interdisciplinary dialogue**
 - Distance has been used first in international trade and then contaminated international business literature
 - Connectivity is now used in IB, Regional studies, Ec geography and transportation economics
- **More direct policy implications**
 - From the identification of a problem (distance and related uncertainty, communication issues and transportation costs,) to the identification of **means to overcome a problem** (infrastructure, organisations, knowledge channels/languages)

Related research streams (2)

Multinational experience vs agglomeration economies

- **Transaction cost approach** to entry modes: **experience of foreign markets** → lower uncertainty → higher incentives to internalise transactions
- The **agglomeration story** is more complex but leads to similar outcomes
 - Co-location of production sites and R&D labs (or combinations)
 - Connectivity substitutes for agglomeration economies
 - Internal agglomeration may substitute external agglomeration as a driver of localisation

However

- Co-location may also lead to **knowledge creation and spillover effects** which can be better accessed and/or exploited via interaction with external parties
- This opens up the possibility that MNEs' localisation strategies are driven by **both** internal agglomeration and external agglomeration processes; and by **both** agglomeration and connectivity

Related research streams (3)

Localisation choices vs. geography of functions

- The availability of data on FDIs detailed by business activities has given rise to expanding literature on the **geography of functions**
- Empirical research has devoted relatively **less attention to the subnational levels** revealing important gaps in
 - Our understanding of the position of regions in GVCs
 - The potential of value capture of local economies
- The literature on localisation patterns of MNEs across regions and cities has provided an important contribution in this direction.

However there is still **limited evidence** on:

- How the geography of functions changes or persists **over time** across regions
- **The effects on host economies** of localisation strategies in different business activities
- Whether inward FDIs have contributed to the local upgrading and the **transition of regions towards higher value added activities**

Functional specialization in FDI

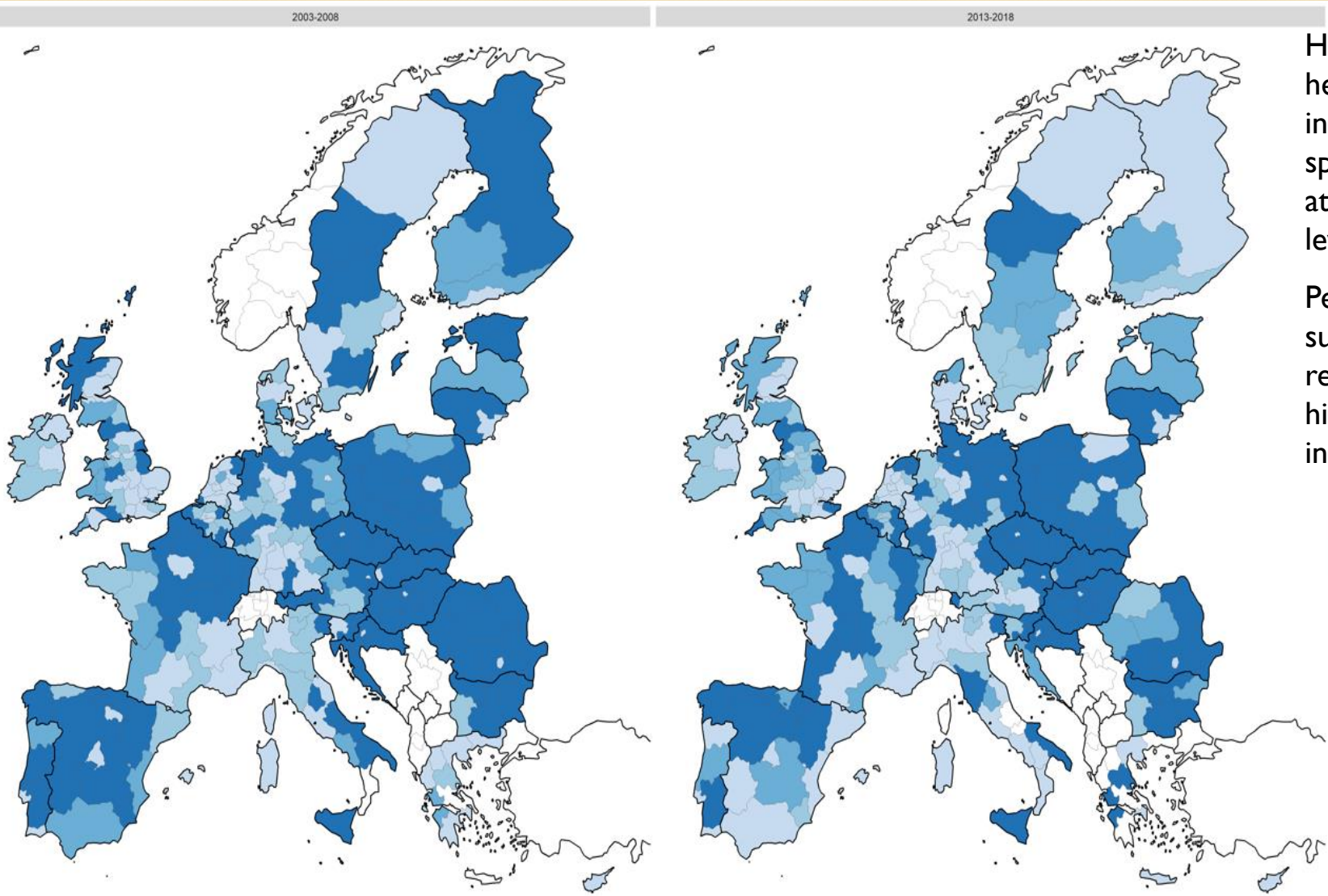
- We use the [fDi Markets database](#) reporting the **GVC function** – R&D; design and development; manufacturing; sales and marketing activity; etc. – each (greenfield) FDI is aimed to perform
- We follow [Timmer et al. \(2019\)](#), [Stollinger \(2021\)](#) and [Coveri & Zanfei \(2022\)](#) and compute a Revealed Comparative Advantage (RCA) index of

$$\text{Functional Specialization in FDI: } FS_i^a = \frac{\frac{FDI_i^a}{\sum_a FDI_i^a}}{\frac{\sum_i FDI_i^a}{\sum_i \sum_a FDI_i^a}}$$

- and a composite indicator of **Relative Functional Specialization in FDI**:

$$RFS_{i,t} = \frac{FS_{i,t}^{production}}{FS_{i,t}^{upstream} + FS_{i,t}^{downstream}}$$

Relative Functional Specialization of European regions before and after the crisis



High heterogeneity in functional specialisation at sub-national level

Peripheral sub-national regions show a higher RFS index

The functional evolution of the EU27 and UK regions over time

- Transition matrices based on the functional specialization in FDI of NUTS-2 regions before and after the crisis
- A strong spatial inertia emerges, especially for regions specialized in production functions
- Functional “downgrading” appears more frequent than functional upgrading trajectories

		2013-2018			
		<i>Upstream</i>	<i>Production</i>	<i>Downstream</i>	<i>Tot.</i>
2003-2008	<i>Upstream</i>	73%	13%	14%	100%
	<i>Production</i>	7%	88%	5%	100%
	<i>Downstream</i>	16%	14%	70%	100%

		2013-2018		
		<i>Upstream & Downstream</i>	<i>Production</i>	<i>Tot.</i>
2003-2008	<i>Upstream & Downstream</i>	84%	16%	100%
	<i>Production</i>	9%	91%	100%

Patterns of functional specialisation and industrial change

	Upgrading			Persistently production			Downgrading				
	2003-2008	2013-2018	Avg.	2003-2008	2013-2018	Avg.	2003-2008	2013-2018	Avg.		
Science-Based	0,94	1,42	1,18	Science-Based	0,90	0,86	0,88	Science-Based	0,87	0,75	0,81
Supplier Dominated	1,28	1,29	1,28	Supplier Dominated	1,16	1,28	1,22	Supplier Dominated	1,28	1,49	1,39
Scale and Information Intensive	1,08	0,72	0,90	Scale and Information Intensive	1,15	1,05	1,10	Scale and Information Intensive	1,13	0,96	1,04
Specialised Supplier	0,67	0,64	0,66	Specialised Supplier	0,73	0,80	0,76	Specialised Supplier	0,67	0,85	0,76

Table 2. Economic and technological characteristics of regions by RFS index value ranges

<i>RFS index</i>	No. of regions		Average GVA p.c.		Avg. growth rate (%) of GVA p.c.		Average no. of patents	
	<i>2003-2008</i>	<i>2013-2018</i>	<i>2003-2008</i>	<i>2013-2018</i>	<i>2003-2008</i>	<i>2013-2018</i>	<i>2003-2008</i>	<i>2013-2018</i>
	0 - 0.5	94	70	41,10	47,18	2.21	1.53	0.255
0.5 - 1.0	35	58	32,34	35,62	1.91	1.28	0.095	0.109
1.0 - 1.5	34	33	28,37	31,02	2.52	1.40	0.053	0.086
> 1.5	103	105	23,54	27,47	3.31	2.13	0.022	0.039

Source: authors' elaboration based on fDi Markets, OECD and Eurostat data.

Table A.1 Cross-sectional correlation between Functional specialization in FDI and the economic and technological development of regions

	<i>Upstream FS</i>	<i>Production FS</i>	<i>Downstream FS</i>	<i>RFS index</i>
GVA p.c. (log)	0.2865** (0.1174)	-1.7853*** (0.2457)	0.5978*** (0.0756)	-1.3533*** (0.2217)
Patents (log)	1.3921*** (0.5107)	-1.9425*** (0.5433)	0.8309*** (0.1703)	-1.9228*** (0.5983)
N. obs.	4256	4256	4256	4256
Year FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Std. errors	by NUTS 2	by NUTS 2	by NUTS 2	by NUTS 2

Note: Pooled OLS with country and time fixed effects. Robust standards errors clustered by NUTS-2 region in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Conclusion

- FDI based studies on **location choices** at the **functional** and **subnational/city levels** shed light on how MNEs orchestrate GVCs and distribute their activities across borders
- They **complement works on distance factors and on multinational experience**
- They pave the way to a **more comprehensive understanding of the geography of functions**

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