FDI inflows in European regions:
What role for investment promotion agencies?

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Introduction: Investment Promotion Agencies

Investment Promotion Agencies (IPAs) are one of the most widespread policies to attract Foreign Direct Investments (FDI) at the national or at the regional/local level

Their **theoretical rationale:**
In presence of **imperfect information in capital markets** (Greenwald & Stiglitz 1986), IPAs make sure that the distribution of inward FDI is driven by production decisions of firms and potential of host economies rather than by information costs (Mariotti & Piscitello 1995)

In practice, they attract and facilitate private investment towards their country/region by:

- o helping investors solve any sort of problem faced
- o actively seeking out investors based on development plans of government
- o lobbying governments to seek approvals of regulations
- o advertising the locations in which they operate

This often involves defining a **strategy targeting specific economic sectors**

In spite of the diffusion and the relevance of IPAs (OECD, 2018), **evidence on their effectiveness is very limited in literature** (Charlton & Davis 2007, Harding & Javorcik 2011, 2012, 2013)

No study has ever considered the presence of **regional agencies**, although the increase in global investment flows has been coupled with growing competition among territories for the attraction of foreign capital, both at the national and at the subnational level

By focusing on the national and regional IPAs in Europe, we verify whether:

- *IPAs strategies to attract FDI are successful*

- *sub-national IPAs affect the territorial distribution of foreign investment*

Counterfactual analysis at the region-sector level for European countries, making use of a newly created dataset (FDI Mkts + Survey)

LSE/ERC CENSUS
OF INVESTMENT PROMOTION AGENCIES
APRIL 2018

We appreciate your time taken to answer this survey. Your responses will be treated as fully confidential.

Country: Click here to enter text.
Region/city: Click here to enter text.
Agency Name: Click here to enter text.
Chief Executive: Click here to enter text.

This survey was completed by:
Please provide information on the person responsible for submitting the questionnaire or the main contact person, in case a follow up is necessary.

Name: Click here to enter text.
Title: Click here to enter text.
Telephone: Click here to enter text.
Email: Click here to enter text.

Inspired by Javorcik and Harding (2011)

1. In which year was the agency established?
Click here to enter text.

2. What is the current status of the agency?

☐ Sub-unit of ministry/regional government
☐ Autonomous public body
☐ Semi-autonomous agency reporting to a ministry/regional government
☐ Joint public-private entity
☐ Private
If other, please specify:
Click here to enter text.

3. Since when has the agency had this status?
Click here to enter text.

4. Has the agency been explicitly targeting particular sectors for FDI inflows?

☐ Yes   ☐ No
*If yes, please tick all that apply:*

		Start year	End year	Still in effect?	If the start year is not known, was it in effect in 2003?
☐	Agriculture, Fishing and Forestry	Click here to enter text.	Click here to enter text.	☐	☐
☐	Mining and Quarrying	Click here to enter text.	Click here to enter text.	☐	☐
☐	Food products	Click here to enter text.	Click here to enter text.	☐	☐
☐	Textiles and apparel	Click here to enter text.	Click here to enter text.	☐	☐
☐	Wood and wood products	Click here to enter text.	Click here to enter text.	☐	☐
☐	Petroleum, chemical, rubber, plastic products	Click here to enter text.	Click here to enter text.	☐	☐
☐	Metal and metal products	Click here to enter text.	Click here to enter text.	☐	☐
☐	Machinery	Click here to enter text.	Click here to enter text.	☐	☐
☐	Computers and electronic equipment	Click here to enter text.	Click here to enter text.	☐	☐
☐	Vehicles and other transport equipment	Click here to enter text.	Click here to enter text.	☐	☐
☐	Electricity, gas and water provision	Click here to enter text.	Click here to enter text.	☐	☐

Sample of IPAs - 1

National IPAs in sample (25 countries, 278 regions)
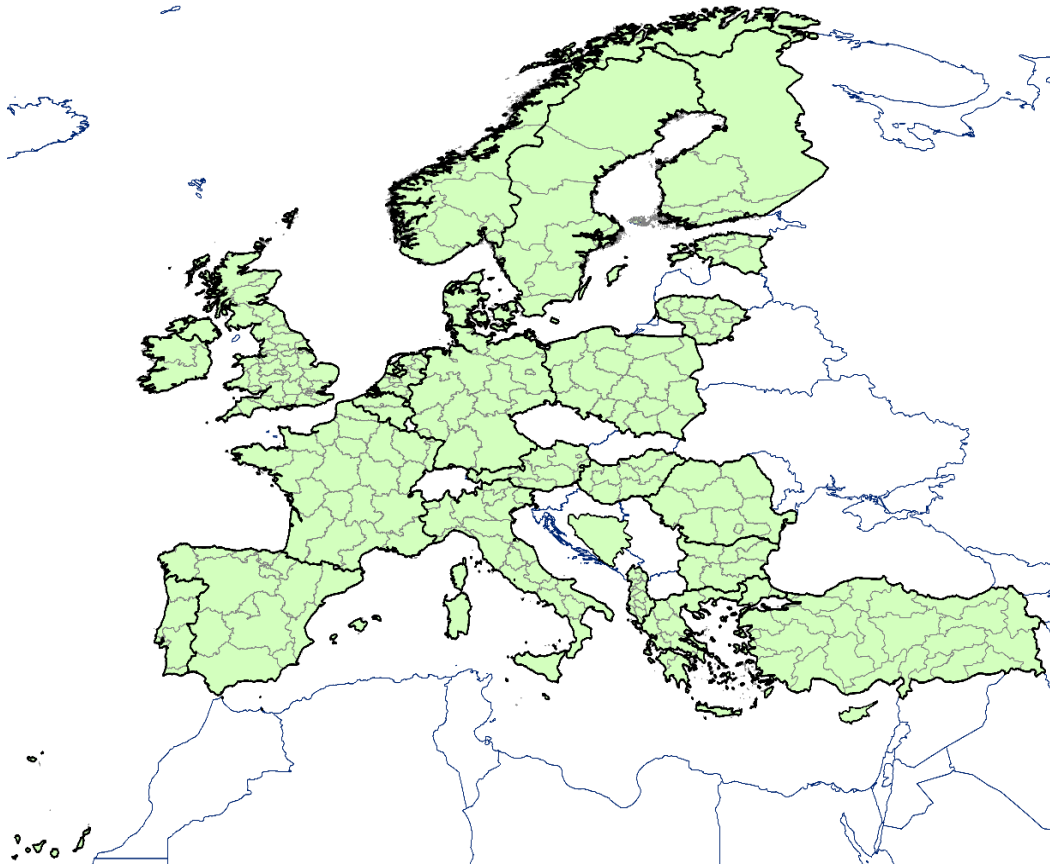
Regions in sample (wip) (80+ regions)
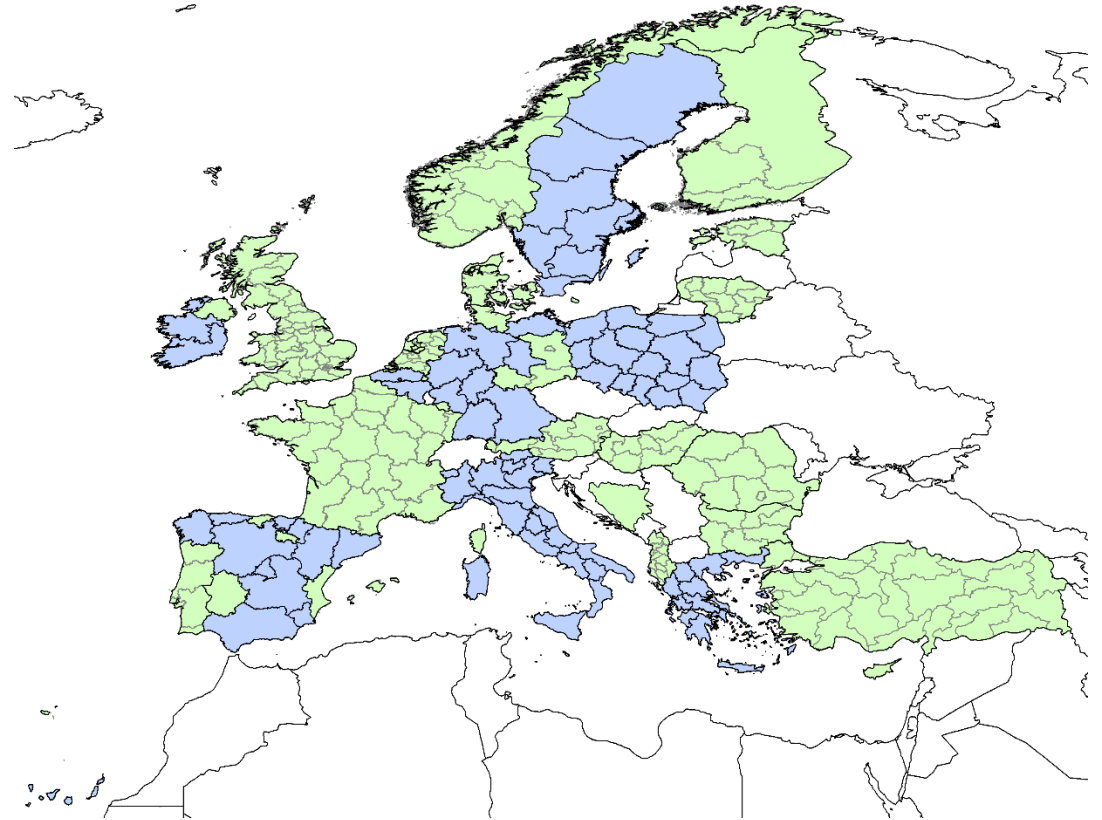
Different models of FDI attraction's strategies:

Belgium is the only EU Member State not having a national IPA, with only regional IPAs active in each region

Greece (Southern Europe) and **Ireland** (Northern Europe) have a national IPA but no regional IPAs.

in **Italy** (Southern Europe) and **Sweden** (Northern Europe) only some regions have their own IPAs

in **Spain, Germany and Poland** all regions have their own IPA. In the Polish case, regional IPAs have been established simultaneously thanks to the financial support of the European Structural Funds.
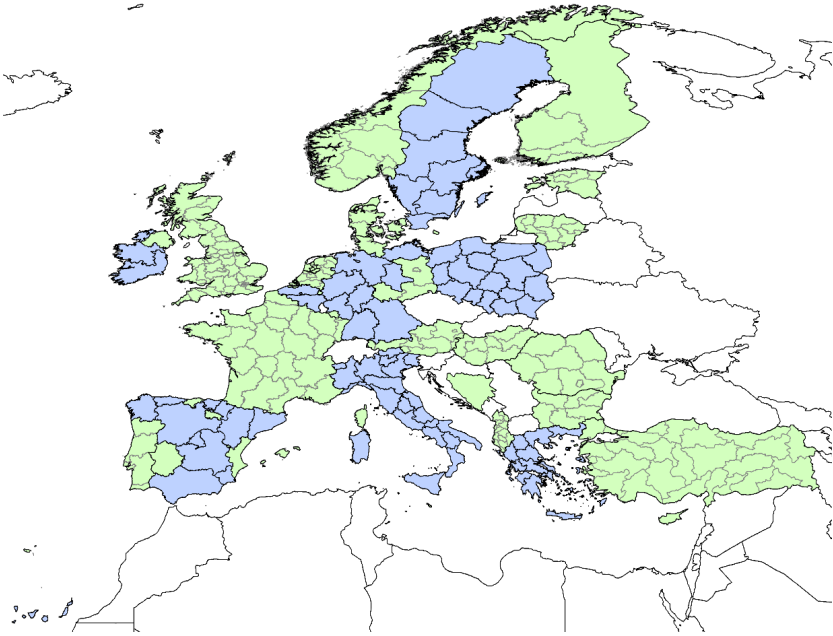
Empirical model

We compare FDI inflows to region-sectors with IPAs strategies in place vs. FDI inflows to region-sectors without, by applying a Diffs-in-diffs model (Harding and Javorcik 2011) estimated at region-sector level for the 2004-2017 period:

$$y_{r,s,t} = \beta \; IPA \; strategy_{r,s,t-n} + \vartheta_{r,t} + \vartheta_{s,t} + \vartheta_{r,s} + \varepsilon_{r,s,t}$$

$y_{r,s,t}$ is either the sum of **million dollars of FDI** in region r in sector s at year t, or the sum of **FDI-related jobs** in region r in sector s at year t (source: fDI Markets).

$IPA \; strategy_{r,s,t-n}$ is a dummy taking value 1 from the moment in which the IPA starts to target sector s (T*POST)

$\vartheta_{r,t}$ and $\vartheta_{s,t}$ are region-year and sector-year fe, accounting for time-varying shocks in regions and sectors (POST)
$\vartheta_{r,s}$ are region-sector fe, accounting for time-invariant region-sector variables (T)

Standard errors are clustered at the region-sector level
Models are estimated also in a dynamic setting in order to control for pre-treatment characteristics more accurately, and with additional dependent variables for sensitivity testing purposes

Baseline results – do national and regional IPAs increase inward FDI?

	Dep.var:	million $ FDI					
		(1)	(2)	(3)	(4)	(5)	(6)
National IPA strategy		0.0427					
		(0.0417)					
L.National IPA strategy			0.0916**				
			(0.0409)				
L2.National IPA strategy				0.131***			
				(0.0390)			
Regional IPA strategy					0.237**		
					(0.104)		
L.Regional IPA strategy						0.251**	
						(0.119)	
L2.Regional IPA strategy							0.195*
							(0.117)
Region-year dummies		✓	✓	✓	✓	✓	✓
Region-sector dummies		✓	✓	✓	✓	✓	✓
Sector-year dummies		✓	✓	✓	✓	✓	✓
Observations		77,840	77,840	77,840	18,760	18,760	18,760
Regions		278	278	278	67	67	67
Region-sectors		5560	5560	5560	1340	1340	1340
R-squared		0.545	0.545	0.545	0.557	0.557	0.557

Baseline results – alternative dependent variables

Dep. var:	FDI-related jobs			FDI dummy			FDI-related jobs			FDI dummy		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
National IPA strategy	0.0311			0.00675								
	(0.0522)			(0.00905)								
L.National IPA strategy		0.102**			0.0250***							
		(0.0512)			(0.00845)							
L2.National IPA strategy			0.130***			0.0268***						
			(0.0491)			(0.00837)						
Regional IPA strategy							0.263**			0.0553**		
							(0.128)			(0.0241)		
L.Regional IPA strategy								0.275*			0.0614**	
								(0.147)			(0.0269)	
L2.Regional IPA strategy									0.240*			0.0641**
									(0.145)			(0.0281)
Region-year dummies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Region-sector dummies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sector-year dummies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	77,840	77,840	77,840	77,840	77,840	77,840	17,360	17,360	17,360	17,360	17,360	17,360
R-squared	0.546	0.546	0.546	0.547	0.548	0.548	0.557	0.557	0.557	0.558	0.557	0.557

How national and regional IPAs interact in attracting FDI?

	Dep.var: **million $ FDI**		
	(1)	(2)	(3)
National IPA strategy	-0.127		
	(0.0797)		
L.National IPA strategy		-0.0994	
		(0.0832)	
L2.National IPA strategy			-0.0162
			(0.0784)
Regional IPA strategy	0.149		
	(0.118)		
L.Regional IPA strategy		0.169	
		(0.134)	
L2.Regional IPA strategy			0.131
			(0.135)
National IPA strategy x Regional IPA strategy	0.209		
	(0.131)		
L.National IPA strategy x L.Regional IPA strategy		0.260*	
		(0.141)	
L2.National IPA strategy x L2.Regional IPA strategy			0.281*
			(0.151)
Region-year dummies	✓	✓	✓
Region-sector dummies	✓	✓	✓
Sector-year dummies	✓	✓	✓
Observations	18,760	18,760	18,760
Regions	67	67	67
Region-sectors	1340	1340	1340
R-squared	0.598	0.591	0.590

Does the impact depends on IPA's activities and nature?

	Dep.var: **million $ FDI**					
	(1)	(2)	(3)	(4)	(5)	(6)
Regional IPA strategy targeting some sectors	0.288***					
	(0.103)					
Regional IPA presence (all sectors targeted)	-0.0302					
	(0.109)					
Regional IPA strategy		0.229**	0.317**	0.111	0.277***	0.191**
		(0.0999)	(0.127)	(0.126)	(0.0986)	(0.0957)
Status of regional agency:						
Regional IPA strategy x Autonomous public body		-0.0289				
		(0.369)				
Regional IPA strategy x Sub-unit of ministry			-0.242			
			(0.210)			
Regional IPA strategy x Semi-autonomous unit reporting to ministry				0.282		
				(0.202)		
Regional IPA strategy x Joint public-private					-0.760**	
					(0.372)	
Regional IPA strategy x Private						0.805
						(0.673)
Region-year dummies		✓	✓	✓	✓	✓
Region-sector dummies	✓	✓	✓	✓	✓	✓
Sector-year dummies	✓	✓	✓	✓	✓	✓
Observations	18,760	15,120	15,120	15,120	15,120	15,120
Regions	67	54	54	54	54	54
Region-sectors	1340	1080	1080	1080	1080	1080
R-squared	0.561	0.588	0.588	0.588	0.588	0.588

regions without agencies are removed here: common support better guaranteed

How the effect of a regional IPA in attracting FDI is influenced by regional IPAs in the neighbouring regions?

$$y_{r,s,t} = \beta\, IPA\, strategy_{r,s,t-n} + \delta\, W(IPA\, strategy_{r,s,t-n}) + \vartheta_{r,t} + \vartheta_{s,t} + \vartheta_{r,s} + \varepsilon_{r,s,t}$$

$W(IPA\, strategy_{r,s,t})$ is the spatial lag of the treatment variable, accounting for the activity of IPAs in neighbouring regions

The spatial weight is operationalised by considering the 4 k-nearest neighbours of region r

$$W(IPA\, strategy_{r,s,t}) = \sum_{j=1}^{n=4} IPA\, strategy_j\, w_{rj} \qquad \text{with } r \neq j$$

Where $W(r,j)$ is:

$$W(r,j) = \begin{cases} 1/k & \text{If j is one of the 4 k-nearest neighbours to region } r \\ 0 & \text{Otherwise} \end{cases}$$

	(1)	(2)
Dep.var: **million \$ FDI**		
	(1)	(2)
Regional IPA strategy	0.237**	0.357***
	(0.102)	(0.122)
W Regional IPA strategy (k-4 neighbours)	-0.0625	0.0456
	(0.0818)	(0.0597)
Regional IPA strategy x W Regional IPA strategy (k-4)		-0.278**
		(0.123)
Region-year dummies	✓	✓
Region-sector dummies	✓	✓
Sector-year dummies	✓	✓
Observations	18,760	18,760
Regions	67	67
Region-sectors	1340	1340
R-squared	0.590	0.541

Test for parallel trend with DID

$$y_{r,s,t} = \beta \, IPA \, strategy_{r,s,t} + \sum_{\tau=1}^{q} \delta_{+\tau} \, D_{r,s,t+\tau} + \vartheta_{r,t} + \vartheta_{s,t} + \varphi \, trend_{r,s,t} + \varepsilon_{r,s,t}$$

q leads dummy variables ($D_{r,s,t+1}$, $D_{r,s,t+2}$, ..., $D_{r,s,t+q}$) are included in the model to check for anticipatory effects in investment flows

e.g. $D_{r,s,t+1}$ takes value 1 in the year prior to the beginning of the investment strategy and 0 otherwise

Region-sector-specific **time trends** included in the model

Test for parallel trend with DID - results

	million $ FDI						Ln sectoral L	
Dep.var:	Leads on national IPA strategy			Leads on regional IPA strategy				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
5 years before IPA strategy	0.0931	0.0849	0.0667	0.0196	-0.0133	-0.0577	-0.00621	0.00724
	(0.0784)	(0.0725)	(0.0715)	(0.200)	(0.193)	(0.192)	(0.00817)	(0.0172)
4 years before IPA strategy	-0.0144	0.0180	0.00162	0.220	0.186	0.140	-0.000556	-0.0161
	(0.0772)	(0.0793)	(0.0772)	(0.179)	(0.176)	(0.173)	(0.00585)	(0.0184)
3 years before IPA strategy	0.0904	0.0901	0.0921	-0.0601	-0.0933	-0.143	-0.000704	-0.00900
	(0.0602)	(0.0599)	(0.0609)	(0.190)	(0.183)	(0.176)	(0.00583)	(0.0162)
2 years before IPA strategy	-0.00982	0.0140	0.0289	-0.0500	-0.0837	-0.134	0.00113	0.00789
	(0.0604)	(0.0599)	(0.0593)	(0.190)	(0.176)	(0.173)	(0.00514)	(0.0144)
1 year before IPA strategy	-0.0168	0.00617	0.0183	0.111	0.0759	0.0207	0.00362	-0.00132
	(0.0670)	(0.0644)	(0.0641)	(0.206)	(0.188)	(0.187)	(0.00678)	(0.0160)
National IPA strategy	0.0879							
	(0.0627)							
L.National IPA strategy		0.155***						
		(0.0570)						
L2.National IPA strategy			0.188***					
			(0.0498)					
Regional IPA strategy				0.271**				
				(0.137)				
L.Regional IPA strategy					0.263*			
					(0.136)			
L2.Regional IPA strategy						0.188		
						(0.140)		
Region-sector time trends	✓	✓	✓	✓	✓	✓	✓	✓
Region-year dummies	✓	✓	✓	✓	✓	✓	✓	✓
Sector-year dummies	✓	✓	✓	✓	✓	✓	✓	✓
Observations	77,840	77,840	77,840	17,360	17,360	17,360	28,308	10,812
Regions	278	278	278	62	62	62	252	62
Region-sectors	5560	5560	5560	1240	1240	1240	4002	1240
R-squared	0.241	0.545	0.545	0.558	0.558	0.558	0.995	0.997

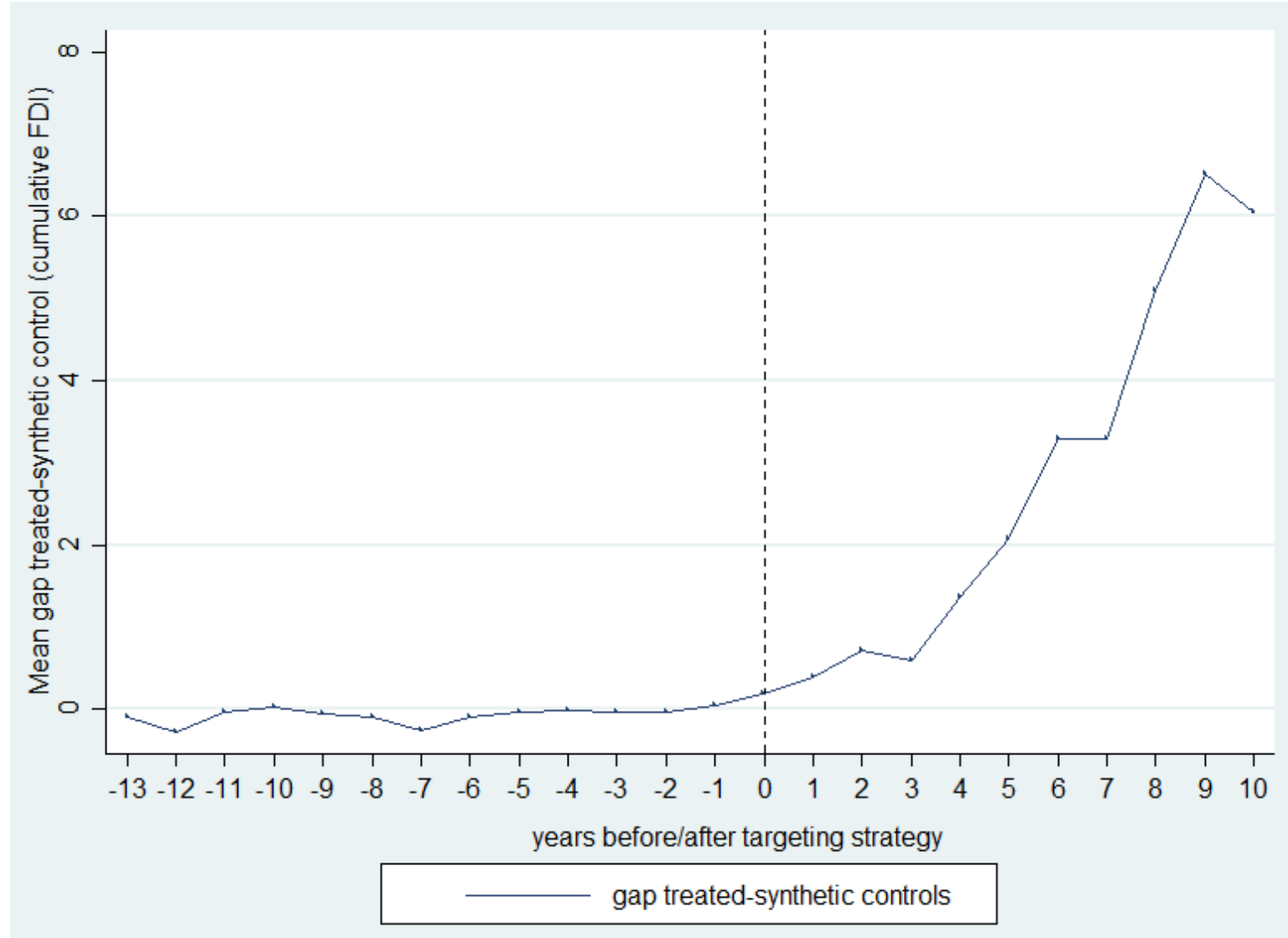# Test for parallel trend with Synthetic Control

1. *for each year of data,*
estimate synth for each treated unit
vs. controls (no agency or never strategy)
in the same sector

(around 300 treated in total,
distributed over time)

2. *Combine together all treated and*
all synthetic controls and estimate:

$$y_{r,s,t} = \sum_{\tau=0}^{q} \sigma_{-\tau} S_{r,s,t-\tau} +$$
$$\sum_{\tau=1}^{q} \delta_{+\tau} D_{r,s,t+\tau} + \vartheta_{r,t} + \vartheta_{s,t} +$$
$$\varphi \ trend_{r,s,t} + \varepsilon_{r,s,t}$$
for r, s ∈ {T, C}

Summary of preliminary results

- Both national and regional IPAs strategies are **effective** in attracting more FDI in targeted sectors vis-à-vis non-targeted region-sectors

- This effect does not appear to be driven by pre-treatment characteristics/investment flows (DID parallel trends and Synthetic Control augmenting the common support)

- Combination of regional and national IPAs in the same sector does not seem redundant

- Having a strategy targeting key sectors is better than targeting all sectors; no type of status emerges as the most efficient

- Preliminary evidence suggesting displacement of FDI from neighbouring regions

Acknowledgments

Thank you for your attention

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Way forward

- *Complete **data collection** on regional IPAs from Spain and Germany (and UK)*

- *More work exploring **heterogeneity** of IPA effectiveness:*
  by regional characteristics (e.g. income; quality of government institutions); by degree of collaboration between regional and national IPAs

- *Examine the role of IPAs' **permanent representations** in foreign countries*

- *More sophisticated examination of **displacement effects** (different spatial weights, different empirical strategy)*

- *Using ORBIS/BvD data on employment by sector for both domestic and foreign firms:*

  *How does **employment in domestic companies** operating in targeted sectors evolves after the beginning of IPA strategies? (descriptive) test for spillover effects to local economy*

Descriptive statistics

Variable	Obs	Mean	Std. Dev.
Million current $ FDI	77,840	22.28	144.68
FDI-related jobs	77,840	69.00	548.75
FDI dummy	77,840	0.23	0.42
National IPA strategy	77,840	0.31	0.46
Employment by sector	43,349	148.06	210.99
Regional IPA strategy	17,360	0.27	0.44
W Regional IPA strategy (k-4 neighbours)	17,360	0.23	0.42

Notes - empirics

1. *National IPAs analysis – where is the variability coming from?*

2. *Having/not having sector-years fe (shocks) changes the results making contemporaneous effect significant. Q: should they even be in there? What is giving us variability when they are in?*

Notes

1. STATUS: private IPAs (e.g. InvestUK) do not need to follow the government investment plan

2. What is the added value of focusing on REGIONS?

    Spatial dimension of National strategy:

    _We look not simply at the general effect of national IPAs but more specifically at the effect on FDI towards all regions of a country – they receive FDI in sectors which are **'chosen'** by the national IPA

    _The next step would be to analyse how this affects **intra-national inequalities**: where are the FDI attracted by the national IPA concentrated?

3. As we control for initial FDI inflow with dynamic model the result holds. In this way we are controlling for pre-treatment characteristics even more

Robustness check – national-level analysis

Dep.var:	IHS million $ FDI				FDI-related jobs			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
National IPA strategy	0.778*** (0.200)	0.0915 (0.135)			1.002*** (0.229)	0.111 (0.152)		
L.National IPA strategy			0.127 (0.137)				0.176 (0.154)	
L2.National IPA strategy				0.230* (0.129)				0.280* (0.145)
Country-year dummies		✓	✓	✓	✓	✓	✓	✓
Country-sector dummies		✓	✓	✓	✓	✓	✓	✓
Sector-year dummies		✓	✓	✓	✓	✓	✓	✓
Observations	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000
Countries	25	25	25	25	25	25	25	25
Country-sectors	500	500	500	500	500	500	500	500
R-squared	0.014	0.801	0.802	0.802	0.017	0.815	0.815	0.815

Test for parallel trends

| | Dep.var: | IHS million $ FDI | | | | | | Ln sectoral L | |
| | | Leads on national IPA strategy | | | Leads on regional IPA strategy | | | Leads on national IPA strategy | Leads on regional IPA strategy |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
5 years before IPA strategy	0.000461	-0.0290	-0.0393	0.0196	-0.0133	-0.0577	0.0159	-0.00132
	(0.269)	(0.261)	(0.256)	(0.200)	(0.193)	(0.192)	(0.0199)	(0.0160)
4 years before IPA strategy	0.199	0.172	0.167	0.220	0.186	0.140	0.0182	0.00789
	(0.265)	(0.257)	(0.251)	(0.179)	(0.176)	(0.173)	(0.0230)	(0.0144)
3 years before IPA strategy	0.131	0.0992	0.0993	-0.0601	-0.0933	-0.143	0.0228	-0.00900
	(0.244)	(0.231)	(0.223)	(0.190)	(0.183)	(0.176)	(0.0261)	(0.0162)
2 years before IPA strategy	-0.117	0.342	0.336	-0.0500	-0.0837	-0.134	0.0421	-0.0161
	(0.366)	(0.250)	(0.251)	(0.190)	(0.176)	(0.173)	(0.0301)	(0.0184)
1 year before IPA strategy	-1.10e-05	-0.0282	-0.0186	0.111	0.0759	0.0207	0.0468	0.00724
	(0.245)	(0.232)	(0.223)	(0.206)	(0.188)	(0.187)	(0.0342)	(0.0172)
National IPA strategy	0.246							
	(0.184)							
L.National IPA strategy		0.243						
		(0.166)						
L2.National IPA strategy			0.309**					
			(0.142)					
Regional IPA strategy				0.271**				
				(0.137)				
L.Regional IPA strategy					0.263*			
					(0.136)			
L2.Regional IPA strategy						0.188		
						(0.130)		
Country- / Region-year dummies	✓	✓	✓	✓	✓	✓	✓	✓
Country- / Region-sector dummies	✓	✓	✓	✓	✓	✓	✓	✓
Sector-year time trends	✓	✓	✓	✓	✓	✓	✓	✓
Observations	7,000	7,000	7,000	18,760	18,760	18,760	2,820	7,644
Countries / Regions	25	25	25	67	67	67	25	62
Country- / region-sectors	500	500	500	1340	1340	1340	500	1240
R-squared	0.802	0.802	0.802	0.598	0.598	0.598	0.999	0.997

Investments – national vs. regional IPAs

Total years of targeting
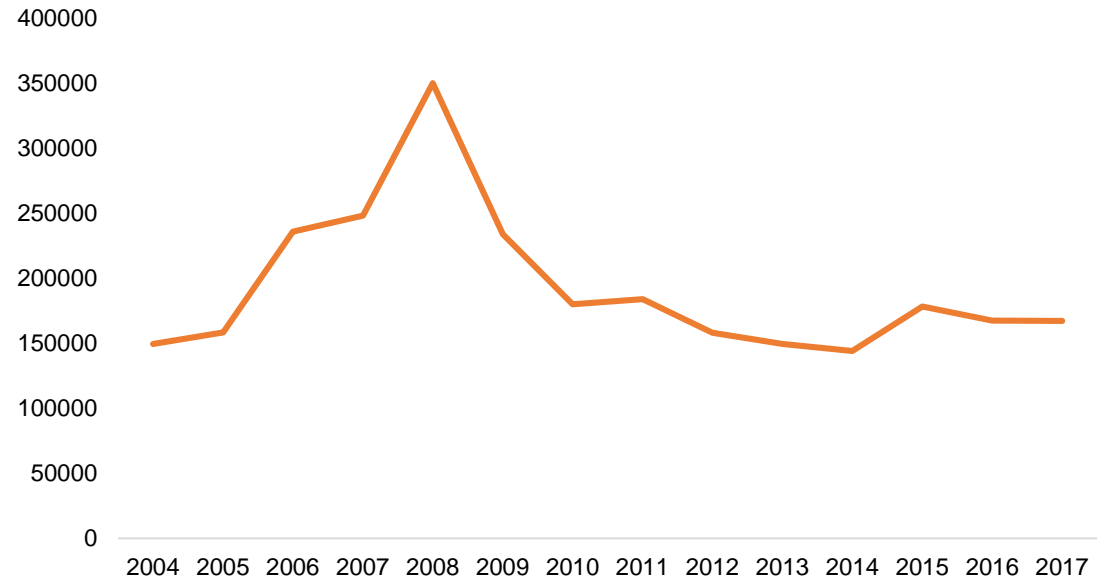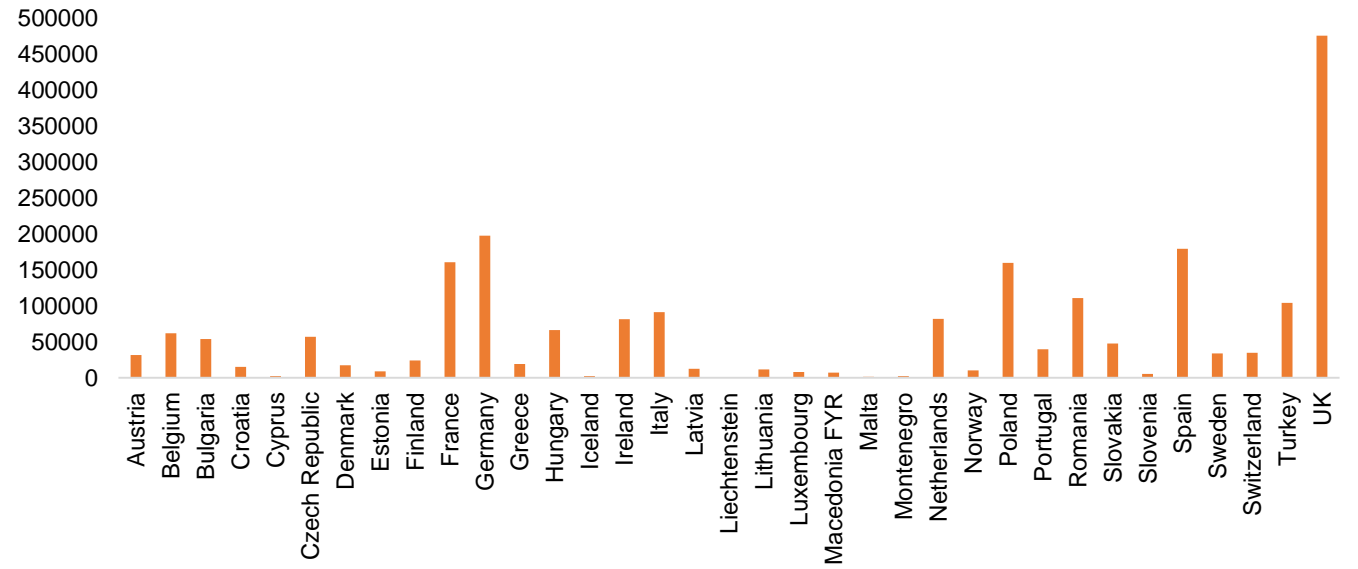
National IPAs
Regional IPAs
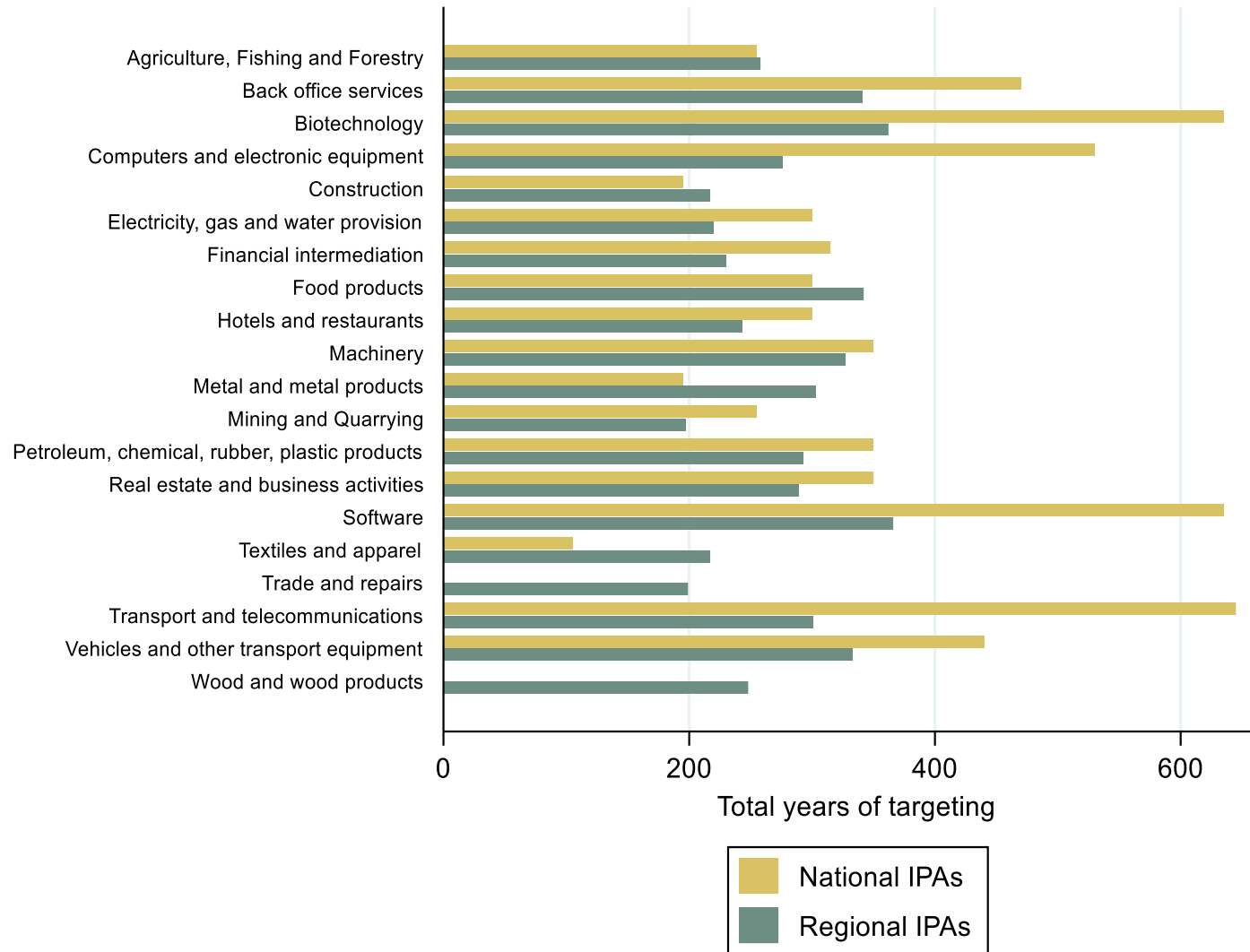
Sample of regions for which information on both national and regional IPAs is available

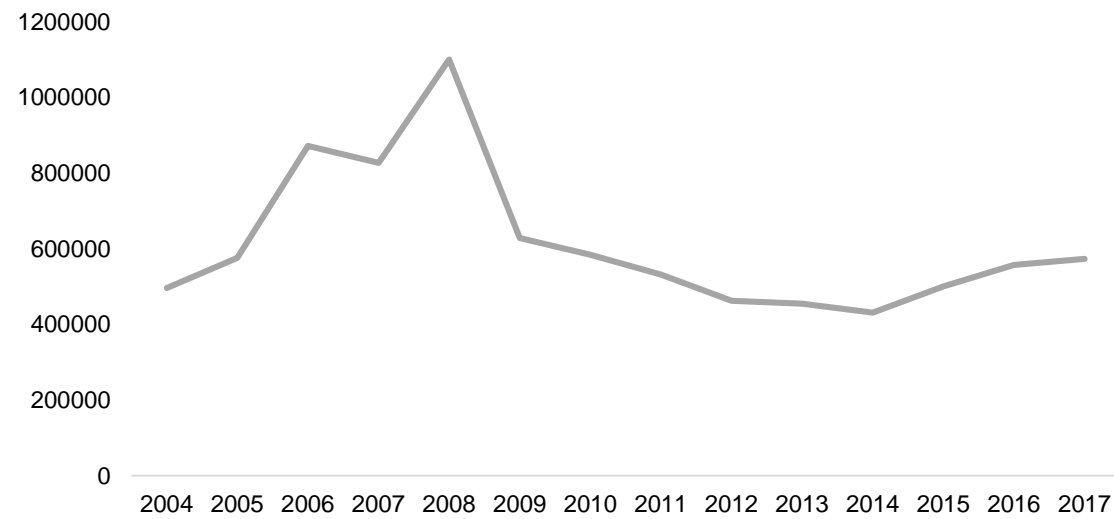# Data: inward FDI towards Europe (money and jobs created)
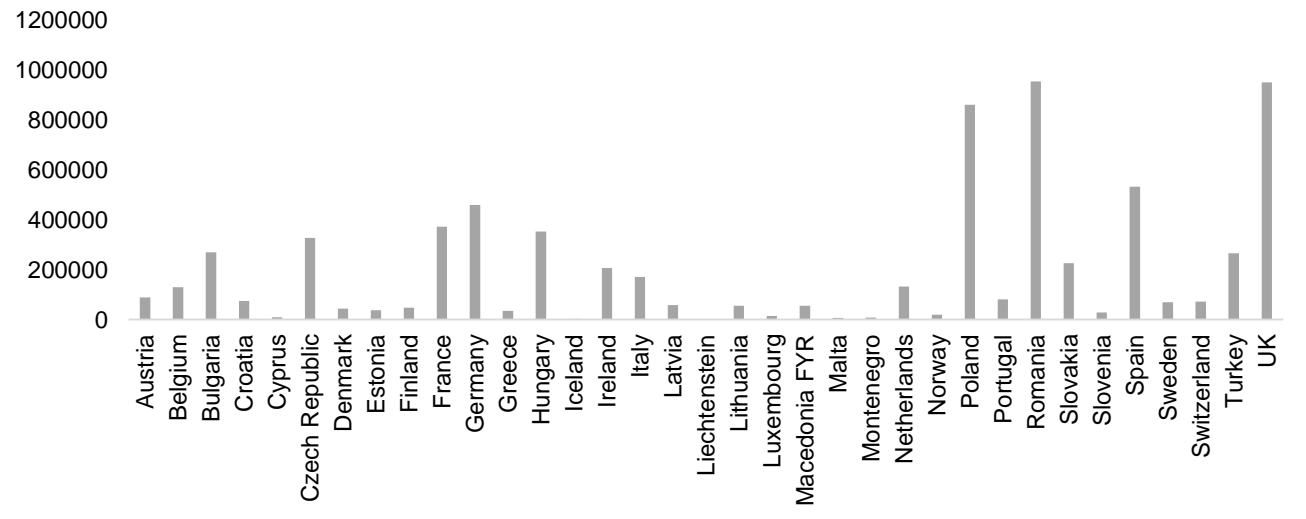

FDI investment (inward Europe)

coded NUTS regions, inward investment by destination country

FDI jobs (inward Europe)

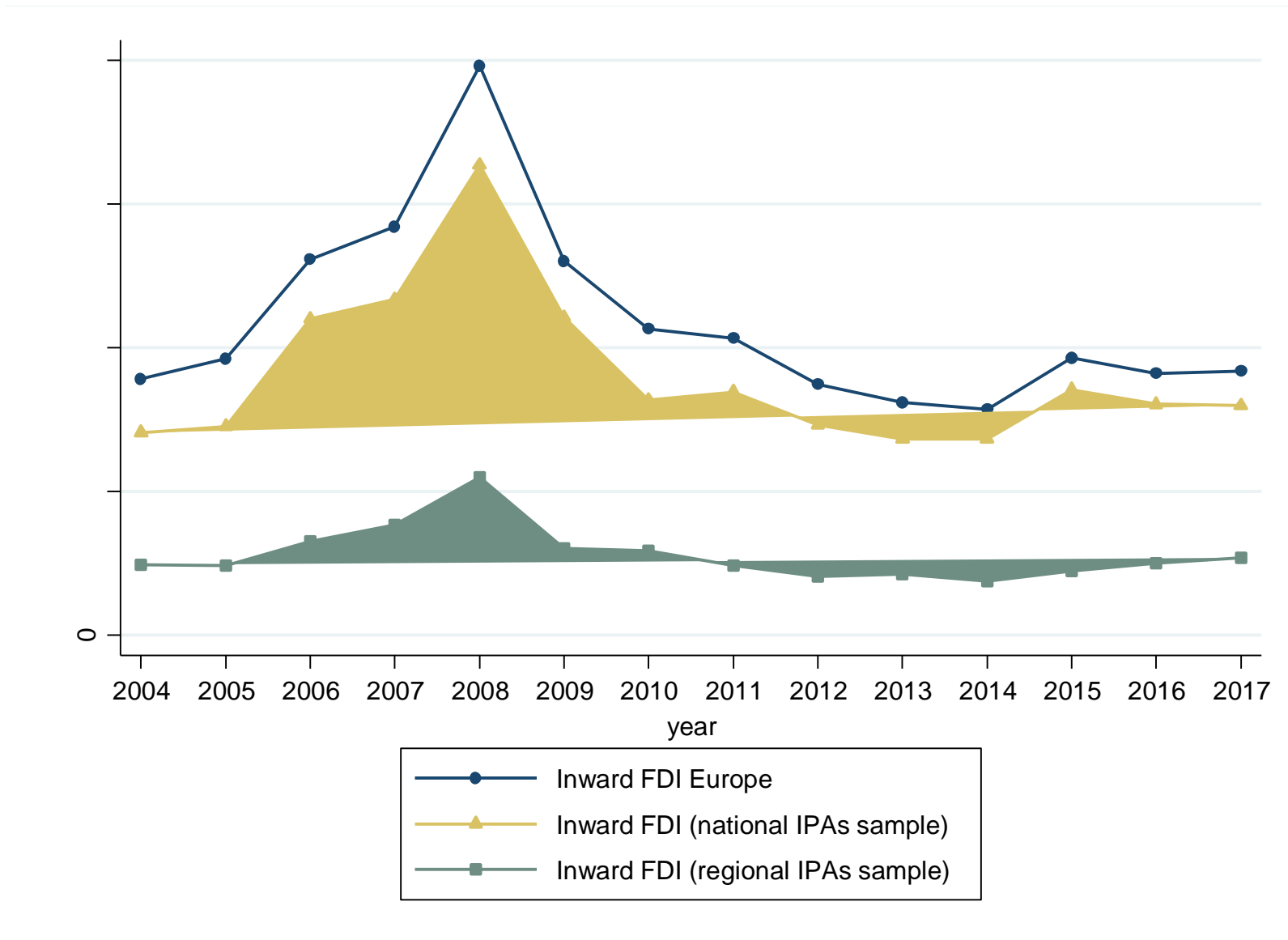coded NUTS regions, FDI jobs by destination country

Displacement and Impact

- IPAs are expected to target capital that will contribute to the development of the receiving economy, both **directly** and through positive **external effects** to local firms
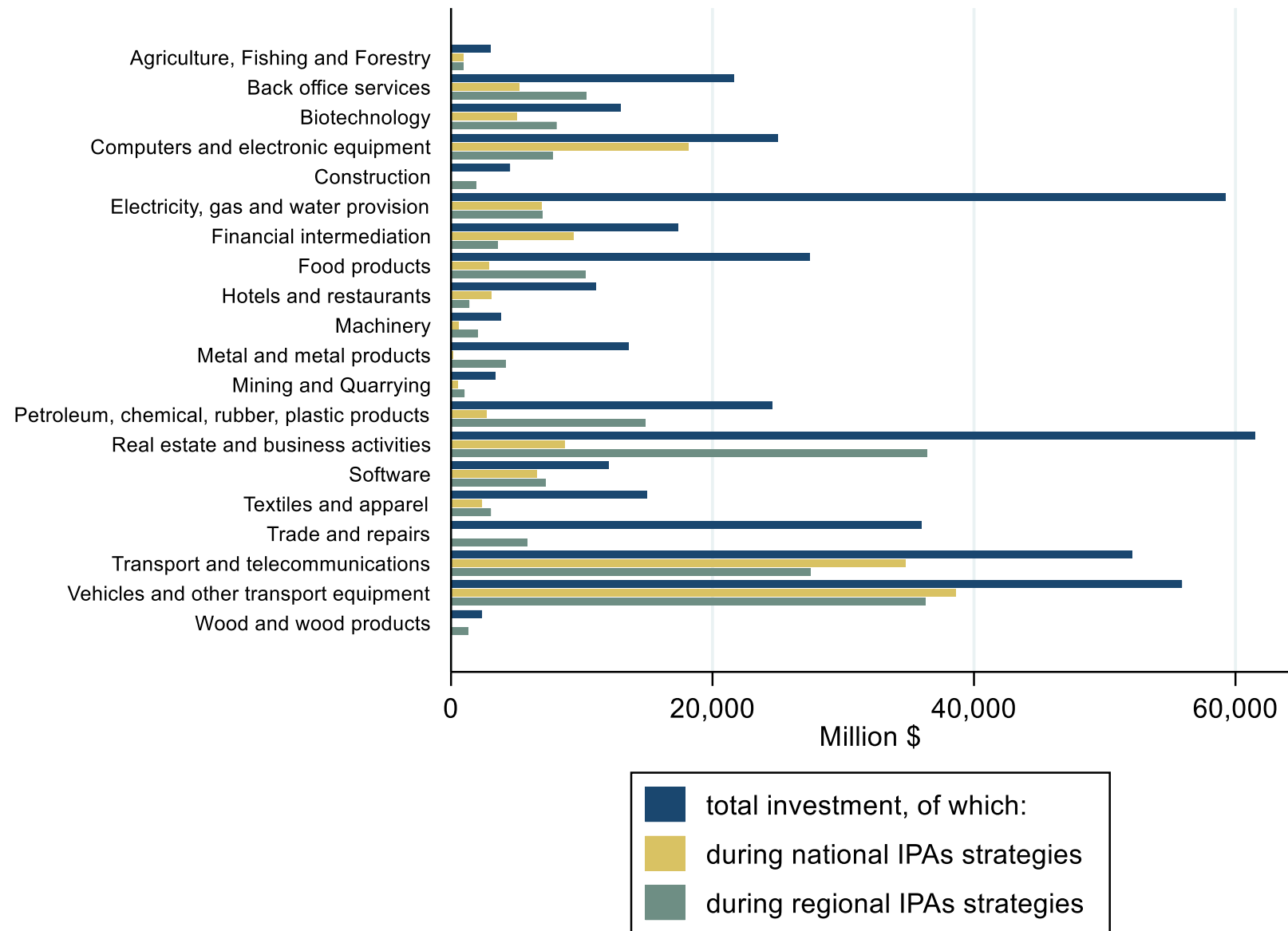
On the other hand, regions trying to attract FDI should be seen as in competition between each other (Cheshire and Gordon 1996)

- **Territorial competition** for foreign investments may imply that FDI flowing into one region is **displacing** investments from another region

- IPAs may contribute to exacerbate this displacement effect – their effectiveness in one region may act to the detriment of the capacity to attract FDI of neighbouring/competing regions (Chien & Gordon 2008)

Inward FDI towards Europe

Investments – national vs. regional IPAs

Sample of regions for which information on both national and regional IPAs is available