Geographical Economics

Course 3: Location puzzle

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What did we learn ?

- Space organization is not homogeneous
- Local unbalances are due to differences in economic environment that drive their attractiveness
- People and firm move

What are we learning today ?

- Some fundamentals about the movement of factors of production

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- Delocation of firms
- Some insights about their impact in the host countries

Fundamentals

- In a perfect competitive setting, the returns of each factor of production are expressed as follows:

$$\begin{aligned} w &= P(MP_L) \Longrightarrow \frac{w}{P} = MP_L \\ r &= P(MP_K) \Longrightarrow \frac{r}{P} = MP_K \end{aligned}$$

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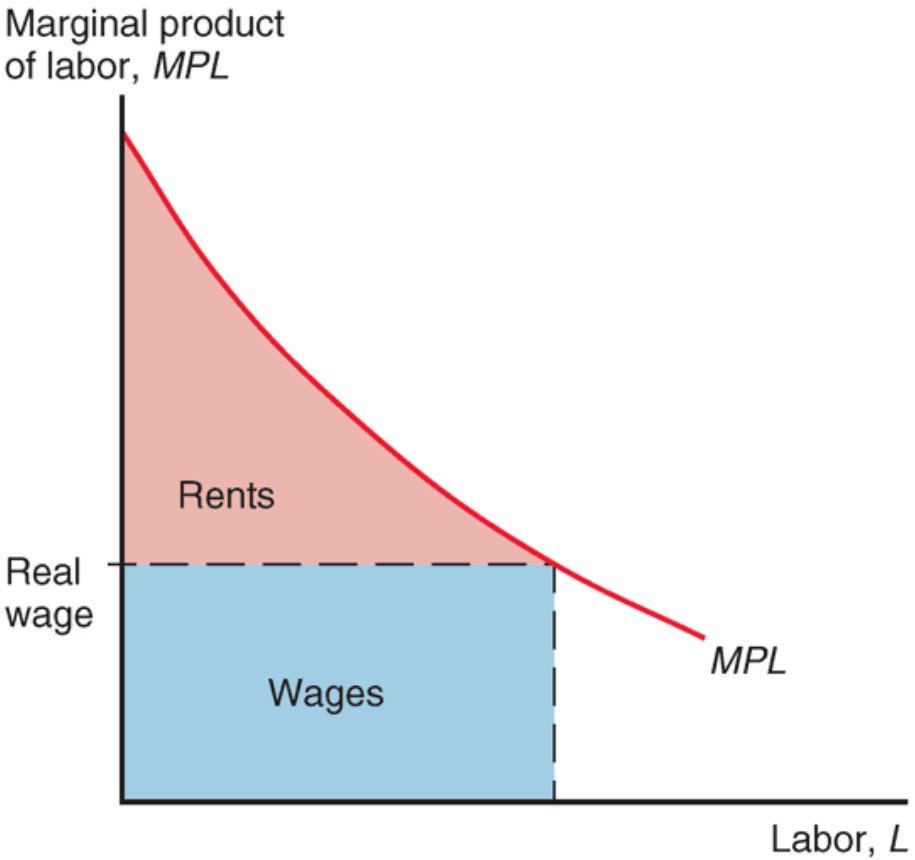
- *In an international setting with free movement of factors, each factor moves versus the location that guarantee higher returns.*
- *Higher returs associate with lower aboundance of factor(s) of production.*

Migration flows: general setting



Migration flows: general setting

	Real Wage, 1870 (U.S. = 100)	Percentage Increase in Real Wage, 1870–1913
Destination Countries		
Argentina	53	51
Australia	110	1
Canada	86	121
United States	100	47
Origin Countries		
Ireland	43	84
Italy	23	112
Norway	24	193
Sweden	24	250

Source: Jeffrey G. Williamson, "The Evolution of Global Labor Markets Since 1830: Background Evidence and Hypotheses," *Explorations in Economic History* 32 (1995), pp. 141–196.

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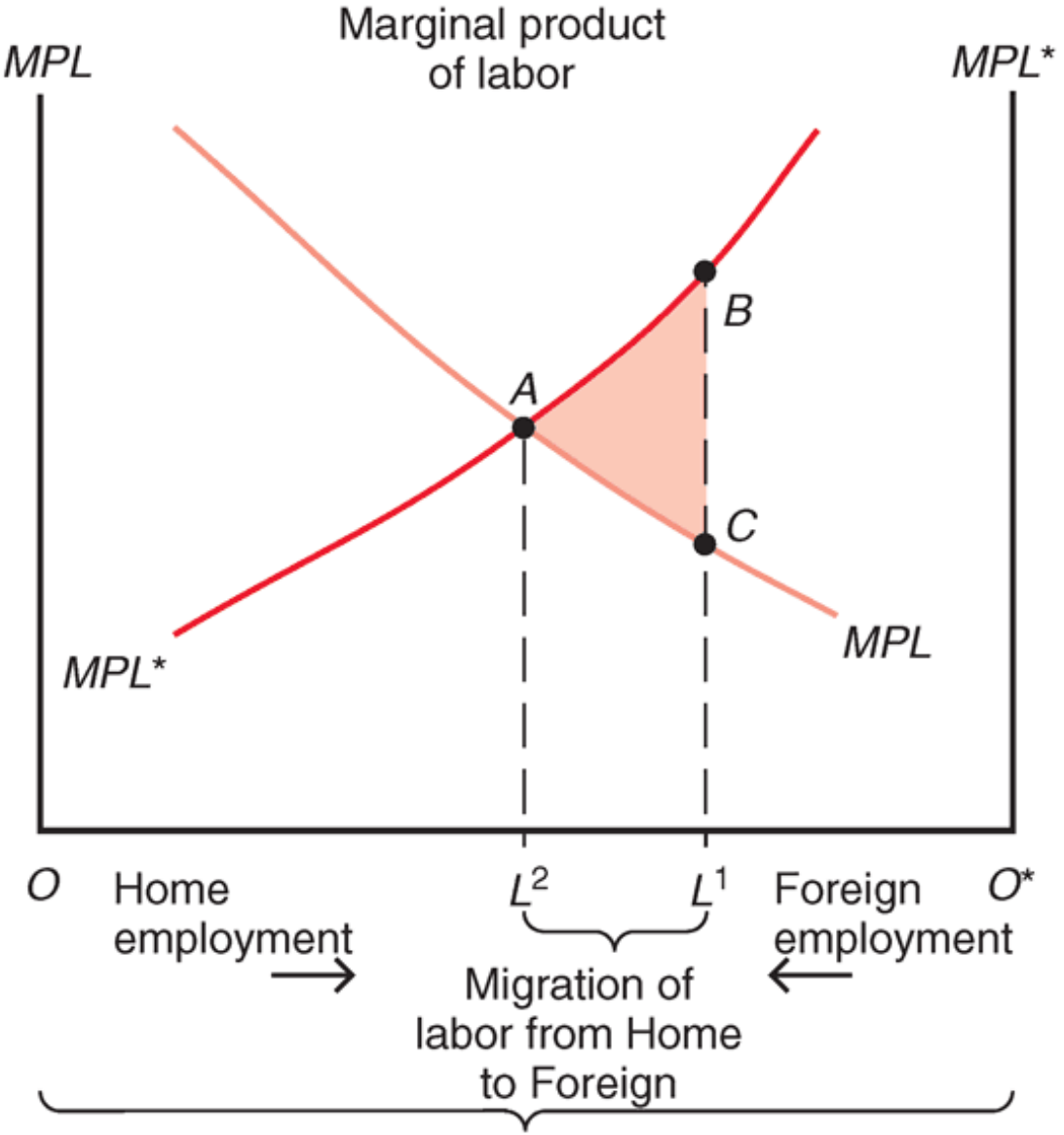

Migration flows: some comments

- In 2000s European countries hosted a big inflows of migrants (Latin America, Eastern-Asian countries; Africa)

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- Case of Spain

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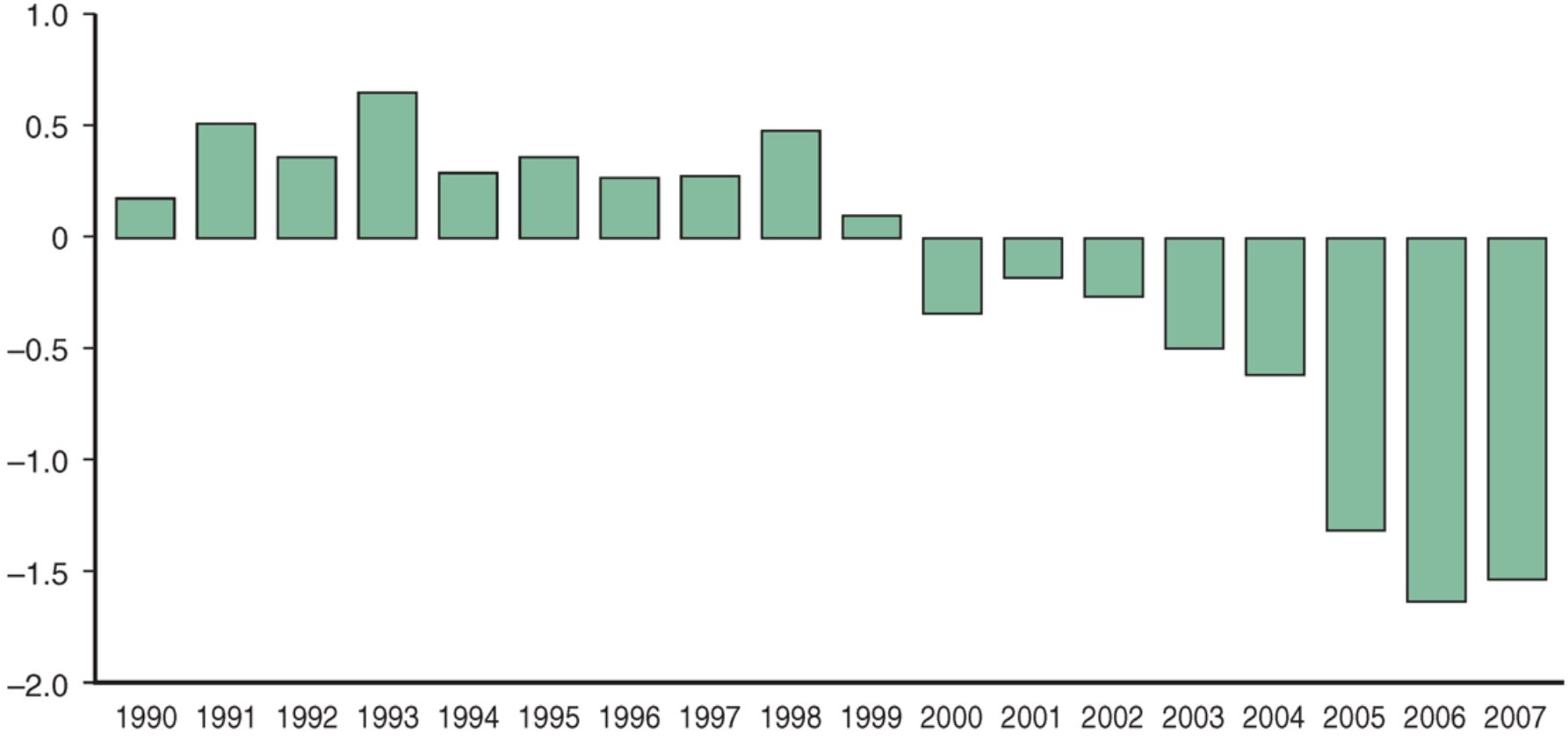
- Therefore, capital should move from the most aboundant "areas" versus the less aboundant ones..
- .....but this is not true (no big movements in Sub-Saharian Africa)...why ?

Evidence

Flows of capital to developing countries as a % of GDP developed countries

(source: Krugman-Obstfeld)



Foreign direct investment (FDI)

- **Foreign direct investment** refers to investment in which a firm in one country *directly controls or owns* a subsidiary in another country.
- If a foreign company invests in at least 10% of the stock in a subsidiary, the two firms are typically classified as a **multinational corporation**.

  - 10% or more of ownership in stock is deemed to be sufficient for direct control of business operations.

  -In addition, international borrowing and lending sometimes occurs between a parent company and its subsidiary.

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- When FDI are more convenient than export to enter new markets ?
- Helpman-Melitz-Yeats (2004) (see graph): productivity matters. Melitz-Redding (2012): more productive firms may export farther.

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1. **Location**: Why is a good produced in two countries rather than in one country and then exported to the second country?
2. The company prefers to replicate the production process elsewhere in the world (**horizontal FDI**).
3. **Internalization**: Why is production in different locations done by one firm rather than by separate firms?
4. Companies prefer to break up the production chain and to transfer parts of the production processes to the affiliate location (**vertical FDI**)

FDI

- Why production occurs in separate locations is often determined by
  - the location of necessary factors of production:
    - mining occurs where minerals are;
    - labor intensive production occurs where relatively large numbers of workers live.
  - transportation costs and other barriers to trade may also influence the location of production.
- These factors also influence the pattern of trade.

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- High productivity
- High market potential
- High density of skill workers ($\Longrightarrow$high wages)

The workhorse framework

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- Markusen (2002) proposes a comprehensive framework to analyze the sources of FDI, determinants and impact on the host markets
- This framework is known as the *knowledge-capital* model

The knowledge-capital model

The model relies on thee important properties:
A. Fragmentation: The location of knowledge-based assets may be fragmented from production.
B. Skilled-labor intensity: Knowledge-based assets are skilled-labor-intensive relative to final production.
C. Jointness: The services of knowledge-based assets are (at least partially) joint inputs into multiple production facilities.

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- Headquarters activities are more skilled-labor intensive than production plants.
- A plant alone is more skilled-labor intensive than the composite good Y sector
- The marginal costs (and trade costs) depend only on factor prices in the country of production and that they are independent of firm type.

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- *Type-h* multinationals will have higher fixed costs than either *type-d* or *type-v* firm from at least one country.
- *Type-h* multinationals will tend to dominate when total world income is high ($M_i + M_j$), when trade costs are relatively high (τ), and when two countries are relatively symmetric in both incomes ($M_i = M_j$) and in factor prices.

Factors attracting FDI

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Host country effects

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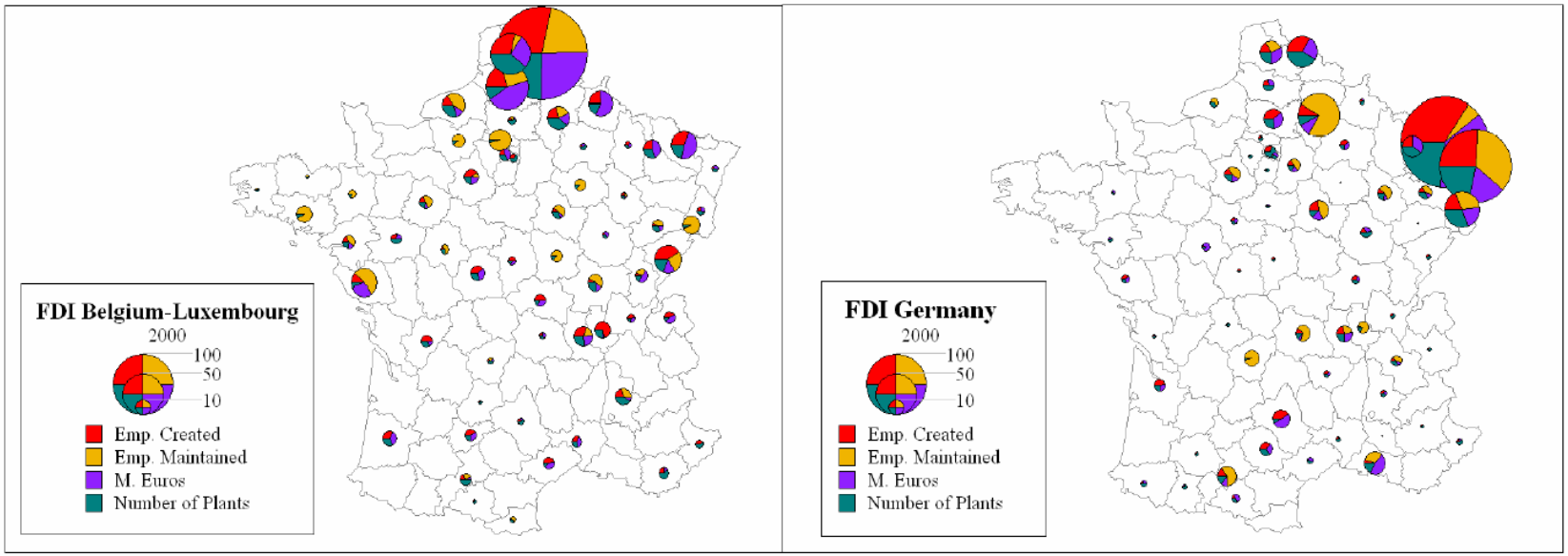
3. Favouring human capital formation

FDI distribution evidence

Lafourcade-Paluzie (2011, RS)


FDI Belgium-Luxembourg
2000
100
50
10
Emp. Created
Emp. Maintained
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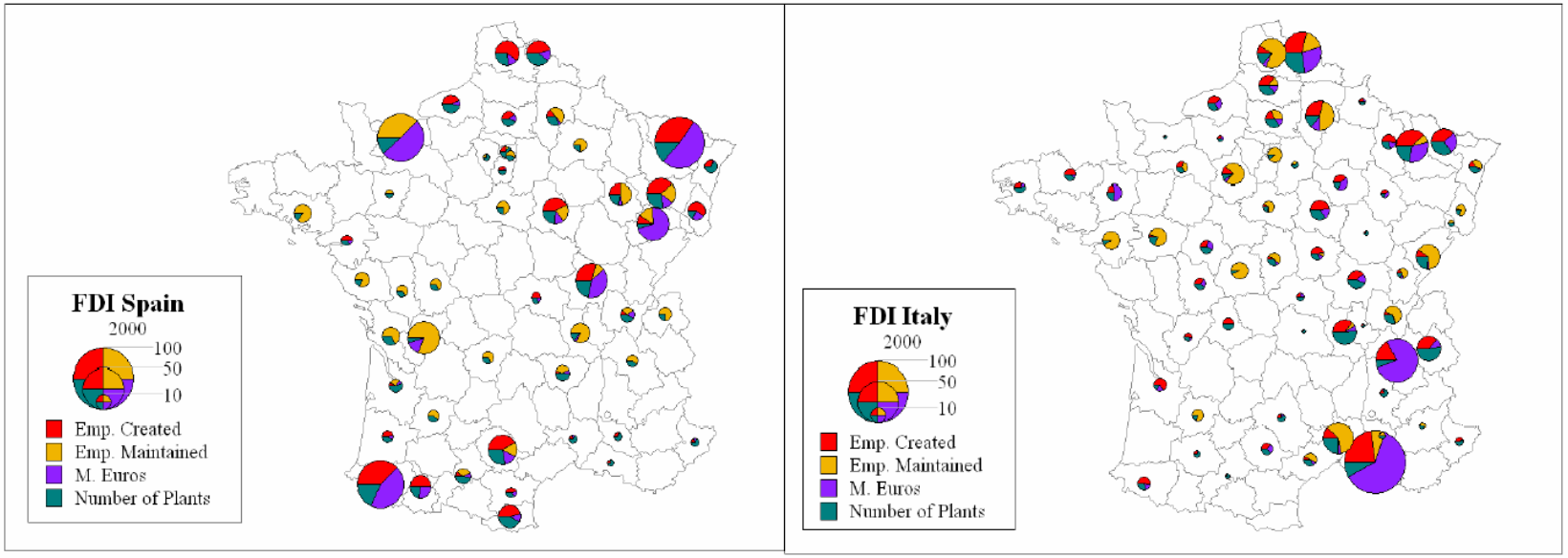
FDI Spain
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100
50
10
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FDI Italy
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100
50
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Employment evidence

Employment in foreign-owned firms in the United States

	As Percent of Total Nonfarm Employment	As Percent of Manufacturing Employment
1977	1.5	3.8
2005	3.8	14.0

Source: U.S. Commerce Department.

(source: Krugman-Obstfeld)

Employment evidence

SPAIN

Tabla 5.1. Empleo por ramas de actividad: empresas con capital extranjero y empleo total

RAMAS DE ACTIVIDAD	CONJUNTO NACIONAL Nº de personas		EMPRESAS CON CAPITAL EXTRANJERO Nº de personas		% EMPLEO EMPRESAS CAPITAL EXTRANJERO S/ EMPLEO TOTAL
	2007	% s/ total	2007	% s/ total	
Sector primario	905.800	4,4%	4.580	0,3%	0,5%
Industria	3.279.100	16,0%	476.765	34,8%	14,5%
Construcción	2.693.500	13,2%	86.350	6,3%	3,2%
Servicios	13.598.500	66,4%	803.086	58,6%	5,9%
TOTAL	**20.476.900**	**100,0%**	**1.370.782**	**100,0%**	**6,7%**

Fuente: Invest in Spain, a partir de datos proporcionados por el Registro de Inversiones Exteriores, 2009.

Employment evidence

Catalunya

EMPLEO GENERADO POR LA IED EN CATALUÑA

Empleo generado por la IED e por CCAA (en miles)						
	2006	2007	% sobre total España 2007	% 2007/2006	Empleo total CCAA	% empleo IED/total CCAA
CATALUÑA	350,11	347,98	25,39%	-0,61%	3.510,60	9,91%
TOTAL	1.338,29	1.370,78	100,00%	2,43%	20.356,00	6,73%

FDI and geography

1. Considering FDI in geography framework implies to take into account heterogeneity.

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2. In Ekholm and Forslid (2001); factor prices differ across locations and this favours the creation of vertical/horizontal FDI; they study how MNE-headquarters (in charge of skill and R&D activities) may locate in the home country or well move to other destinations (costs factors and productivity drive this decision).

FDI and geography

1. Midelfart and Knavirk (2003): empirical approach to identify the distinguishing features of specialization in European regions/countries; these specialization patterns are particularly attractive for agglomeration of native firms as well as of MNE.

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2. Spatial lag in FDI and market potential: FDI tends to clusters; third country effect and market potential (Head and Mayer, 2004; Neary, 2008; Ekholm, Forslid, Markusen, 2007; Bloningen and others, 2007).

FDI and the regional dimension

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- The novelty of this paper is to provide an original framework to undestand the determinants of FDI inflows in a sample of European regions.

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- Regions: Baden Württemberg(G), Catalunya, and Lombardia(I)

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- Regions: Baden Württemberg(G), Catalunya, and Lombardia(I)
- Selected sample of sectors: Finance (be attentive...); Services; Manufacturing; Mechanical (including automotives); Electrical and hight tech; Chemical.

FDI and the regional dimension: empirical evidence

Table 3. Cumulative FDI outflows by sector (1995–2005) (%)

	Baden-Württemberg	Catalunya	Lombardia[a]
Traditional manufacturing	11	28	35
Machinery and automotive	16	5	3
Finance and credit	45	17	34
Electrical and high tech	2	3	7
Chemical	—	14	5
Other services[b]	26	34	16
Total (million €)	700,135	38,530	122,379

FDI and the regional dimension: empirical evidence

	(1)	(2)	(3)	(4)
Baden-Württemberg				
C	−6.11*** (1.55)	−7.65*** (1.84)	−5.24*** (1.27)	−4.19*** (1.19)
DAVARAGE	3.34*** (0.33)	3.34*** (0.33)	3.35*** (0.32)	3.35*** (0.32)
ULBV	−2.04*** (0.50)	−2.10*** (0.49)	−2.14*** (0.50)	−2.17*** (0.50)
GDP	2.47 E−05*** (5.97 E−06)			
GGDP		4.31 E−06*** (9.97 E−07)		
Market potential (by region) with total GDP			0.002*** (0.0004)	
Market potential (by country) with total GDP				0.001*** (0.0002)
Adjusted R^2	0.86	0.86	0.87	0.87
Observations	60	60	60	60

FDI and the regional dimension: empirical evidence

Catalunya				
C	−0.07 (0.07)	−0.07 (0.07)	−0.12 (0.08)	−0.14 (0.09)
DAVARAGE	0.09*** (0.02)	0.09*** (0.02)	0.09*** (0.02)	0.09*** (0.02)
ULBV	−0.21** (0.10)	−0.21** (0.10)	−0.21** (0.10)	−0.21** (0.10)
GDP	2.16 E−06*** (6.87 E−07)			
SGDP		4.01 E−07*** (9.23 E−06)		
D2003	−0.14*** (0.04)	−0.14*** (0.038)	−0.14*** (0.04)	−0.14*** (0.04)
D2004	−0.14*** (0.04)	−0.14*** (0.043)	−0.13*** (0.04)	−0.13*** (0.04)
Market potential (by region) with total GDP			0.0006*** (0.0001)	
Market potential (by country) with total GDP				0.0001*** (4.40 E−05)
Adjusted R^2	0.42	0.45	0.45	0.45
Observations	54	54	54	54

FDI and the regional dimension: empirical evidence

Lombardia				
C	−0.08*** (0.03)	−0.09*** (0.03)	−0.11*** (0.03)	−0.09*** (0.03)
DUM	0.02** (0.007)	0.02** (0.007)	0.02** (0.007)	0.02** (0.007)
ULBV	−0.02** (0.01)	−0.02* (0.01)	−0.02* (0.01)	−0.02** (0.01)
GDP	4.00E−07*** (1.01 E−07)			
IGDP		9.62 E−08*** (2.43 E−08)		
Market potential (by region) with total GDP			6.31 E−05*** (1.62 E−05)	
Market potential (by country) with total GDP				4.09 E−05*** (1.01 E−05)
Adjusted R^2	0.45	0.45	0.44	0.45
Observations	36	36	36	36

FDI and the regional dimension: salient points

- Home market effect

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- Market potential effect (calculated as $M_{ij} = \sum_j \frac{Y_j}{d_{ij}}$)

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- Home market effect
- Market potential effect (calculated as $M_{ij} = \sum_j \frac{Y_j}{d_{ij}}$)
- Productivity index