Exploring European Regional Trade

Marta Santamaría, Jaume Ventura and Uğur Yeşilbayraktar

ISOM conference

June 22, 2022
European regions
European regions
Bilateral trade matrix for European regions

The matrix of bilateral regional trade:

\[ \mathbf{X} = \begin{bmatrix}
X_{11} & X_{12} & \cdots & X_{1N} \\
X_{21} & X_{22} & \cdots & X_{2N} \\
\vdots & \vdots & \ddots & \vdots \\
X_{N1} & X_{N2} & \cdots & X_{NN}
\end{bmatrix} \]

Since \( \sum_n \sum_m X_{nm} = 1 \), entries are trade probabilities.

- 269 European regions covering 24 countries, 12 industries and 7 years:
  - Agricultural, manufacturing and mining goods, but no services;
  - Goods shipped by road (about half of all European goods trade), but not by other means.
Bilateral trade matrix for European regions

- Home: 40%. Country: 41%. Foreign: 19%.
Actual distance traveled

- Home: 21.2 Km.
- Country: 223.0 Km.
- Foreign: 631.9 Km.
The independence benchmark

- The matrix of bilateral regional trade:

\[
X = \begin{bmatrix}
X_{11} & X_{12} & \cdots & X_{1N} \\
X_{21} & X_{22} & \cdots & X_{2N} \\
\vdots & \vdots & \ddots & \vdots \\
X_{N1} & X_{N2} & \cdots & X_{NN}
\end{bmatrix}
\]

- Define \( X_n^O \equiv \sum_l X_{nl} \) and \( X_m^D \equiv \sum_k X_{km} \).

- **Independence benchmark**: “the probability of a shipment from origin \( n \) to destination \( m \) should be \( X_n^O X_m^D \).”

- Theoretical prediction?
- Forecast with limited information?
Actual vs “predicted” trade (log) probabilities

- Home: 40% vs 1%
- Country: 41% vs 14%
- Foreign: 19% vs 85%

R-squared = 0.22
Slope = 0.69
Home, country and foreign normalized market shares

Normalized market shares: \( S_{nm} = \frac{X_{nm}}{X_n^O X_m^D} \).

Home: 469.5. Country: 11.22. Foreign: 0.44.
Bilateral matrix of (log) normalized market shares
The gravity framework

- Cost of shipping goods from $n$ to $m$: $M_{nm} = \exp \left\{ i \theta^i Z_{nm} \right\}$

- The gravity framework:

\[
S_{nm} = \frac{M_{nm}}{M_n^O M_m^D} \quad \text{(or) \quad} X_{nm} = \frac{M_{nm}}{M_n^O M_m^D} X_n^O X_m^D \tag{1}
\]

where $M_n^O$ and $M_m^D$ are defined as:

\[
1 = \sum_m X_m^D M_{nm} \frac{1}{M_n^O M_m^D} \tag{2}
\]

\[
1 = \sum_n X_n^O M_{nm} \frac{1}{M_n^O M_m^D} \tag{3}
\]
An important example: border effect only

- Border effect only: \( M_{nm} = \exp \{\beta B_{nm}\} \)
  - Home/country bias;
  - Small-country effect

 SVY  (ISOM conference)  Exploring European Regional Trade  June 22, 2022  12 / 31
An important example: distance effect only

- Distance effect only: $M_{nm} = \exp\{\sigma D_{nm}\}$
  - Home/country bias;
  - Remoteness effect
An important example: border and distance effects

- Border and distance effects: \( M_{nm} = \exp \{ \sigma D_{nm} + \beta B_{nm} \} \)
### Fixed-effects regressions

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Log(S_nm)</td>
<td>Log(S_nm)</td>
<td>Log(S_nm)</td>
<td>Log(S_nm)</td>
<td>Log(S_nm)</td>
<td>Log(S_nm)</td>
</tr>
<tr>
<td>Border dummy</td>
<td>-2.384***</td>
<td>-2.340***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.260)</td>
<td>(0.243)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Border / common language / common currency dummy</td>
<td>-1.530***</td>
<td>-1.491***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.189)</td>
<td>(0.185)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Border / common language / different currency dummy</td>
<td>-1.799***</td>
<td>-1.742***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.228)</td>
<td>(0.221)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Border / different language / common currency dummy</td>
<td>-2.267***</td>
<td>-2.242***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.183)</td>
<td>(0.171)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Border / different language / different currency dummy</td>
<td>-2.777***</td>
<td>-2.744***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.221)</td>
<td>(0.208)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Border dummies for each country pair</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Distance (constant-elasticity)</td>
<td>-1.190***</td>
<td>-1.071***</td>
<td>-1.006***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0668)</td>
<td>(0.0607)</td>
<td>(0.0712)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distance (variable-elasticity)</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Origin FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Dest FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Observations</td>
<td>46505</td>
<td>46505</td>
<td>46505</td>
<td>46505</td>
<td>46505</td>
<td>46505</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.610</td>
<td>0.611</td>
<td>0.623</td>
<td>0.624</td>
<td>0.666</td>
<td>0.668</td>
</tr>
</tbody>
</table>

Standard errors in parentheses

- * $p < .1$, ** $p < .05$, *** $p < .01$

#### Distance and border effects:
- $\sigma = -1$: double the distance, half the trade.
- $\beta = -2.4$ ($-2.8$ or $-1.5$): add a border, trade drops to 10% (6% or 22%).
### The home bias effect

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log(S_{nm})</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Border dummy</td>
<td>-2.380***</td>
<td>-2.321***</td>
<td>-1.499***</td>
<td>-1.466***</td>
<td>-1.763***</td>
<td>-1.726***</td>
</tr>
<tr>
<td></td>
<td>(0.261)</td>
<td>(0.241)</td>
<td>(0.182)</td>
<td>(0.179)</td>
<td>(0.228)</td>
<td>(0.218)</td>
</tr>
<tr>
<td>Border / common language / common currency dummy</td>
<td>-1.499***</td>
<td>-1.466***</td>
<td>-1.763***</td>
<td>-1.726***</td>
<td>-2.265***</td>
<td>-2.217***</td>
</tr>
<tr>
<td></td>
<td>(0.182)</td>
<td>(0.179)</td>
<td>(0.228)</td>
<td>(0.218)</td>
<td>(0.176)</td>
<td>(0.165)</td>
</tr>
<tr>
<td></td>
<td>(0.218)</td>
<td>(0.208)</td>
<td>(0.176)</td>
<td>(0.165)</td>
<td>(0.222)</td>
<td>(0.208)</td>
</tr>
<tr>
<td>Border / different language / different currency dummy</td>
<td>SOLVE</td>
<td>SOLVE</td>
<td>SOLVE</td>
<td>SOLVE</td>
<td>SOLVE</td>
<td>SOLVE</td>
</tr>
<tr>
<td></td>
<td>(SOLVE)</td>
<td>(SOLVE)</td>
<td>(SOLVE)</td>
<td>(SOLVE)</td>
<td>(SOLVE)</td>
<td>(SOLVE)</td>
</tr>
<tr>
<td>Border dummies for each country pair</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Home Bias</td>
<td>1.013***</td>
<td>2.079***</td>
<td>1.271***</td>
<td>2.166***</td>
<td>1.424***</td>
<td>2.233***</td>
</tr>
<tr>
<td></td>
<td>(0.259)</td>
<td>(0.409)</td>
<td>(0.218)</td>
<td>(0.352)</td>
<td>(0.184)</td>
<td>(0.289)</td>
</tr>
<tr>
<td>Distance (constant-elasticity)</td>
<td>-1.150***</td>
<td>-1.016***</td>
<td>-0.903***</td>
<td>SOLVE</td>
<td>SOLVE</td>
<td>SOLVE</td>
</tr>
<tr>
<td></td>
<td>(0.0689)</td>
<td>(0.0604)</td>
<td>(0.0670)</td>
<td>(SOLVE)</td>
<td>(SOLVE)</td>
<td>(SOLVE)</td>
</tr>
<tr>
<td>Distance (variable-elasticity)</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Origin FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Dest FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Observations</td>
<td>46505</td>
<td>46505</td>
<td>46505</td>
<td>46505</td>
<td>46505</td>
<td>46505</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.611</td>
<td>0.613</td>
<td>0.625</td>
<td>0.627</td>
<td>0.669</td>
<td>0.671</td>
</tr>
</tbody>
</table>

Standard errors in parentheses

* $p < .1$, ** $p < .05$, *** $p < .01$
Statistical and political borders

Statistical (NUTS2) regions

Political Regions
Empirical strategy

- Using only country trade, we estimate this regression for each country

\[ \ln S_{nm} = \phi_n^O + \phi_m^D + \sigma D_{nm} + \beta_1 HB_{1nm} + \beta_2 HB_{2nm} + u_{nm} \]

where \( HB_{1nm} \) and \( HB_{2nm} \) are home bias dummies at NUTS1 and NUTS2 level.

- Expected results:
  - **Group 1**: There are no regional governments \((\beta_1 = \beta_2 = 0)\):
    - Portugal (5), Bulgaria (6), Slovenia (2)
  - **Group 2**: NUTS2 coarser than political units \((\beta_1 = 0, \beta_2 \geq 0)\):
    - Finland (5), Romania (8), Slovakia (4), Switzerland (7), Norway (7), Hungary (8), Croatia (2), Czech Republic (8)
  - **Group 3**: NUTS2 coincides with political units \((\beta_1 = 0, \beta_2 > 0)\):
    - Austria (9), Denmark (5), France (22), Greece (13), Ireland (3), Italy (21), Netherlands (12), Poland (16), Spain (16)
  - **Group 4**: NUTS finer than political units \((\beta_1 > 0, \beta_2 > 0 \text{ or } \beta_2 = 0)\):
    - UK (39), Germany (39), Belgium (11)
Regional borders results
Additional exercises

1. Decomposition of extensive and intensive margins

<table>
<thead>
<tr>
<th>Num. of industries</th>
<th>Mean shipments per ind</th>
<th>Mean kg per shipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>0.139</td>
<td>0.317</td>
</tr>
<tr>
<td>Country</td>
<td>0.146</td>
<td>0.133</td>
</tr>
<tr>
<td>Foreign</td>
<td>0.066</td>
<td>0.039</td>
</tr>
</tbody>
</table>

Table: Contribution to variance of $\ln(X_{nm})$

- Variation within home trade is explained by both margins, variation in foreign trade explained by intensive margin (+90%).

2. Comparison of trade interactions and social interactions (Bailey et al 2021).

- Social connectedness is - correlated with home trade, (strongly) + correlated with country trade and (weakly) + correlation with foreign trade.
- Border effect is larger (more negative) in social interactions
- Distance effect is larger (more negative) in trade interactions
Concluding remarks

- Exploration of main patterns in European regional trade
- Strong home and country bias in trade, about 81% of all regional trade
- National borders and geographic distance explain two-thirds of the variation in country and foreign trade
- Home bias seems related to the presence of regional political borders
Modal split: Inland Intra-EU trade

![Bar chart showing modal split for different types of goods in Inland Intra-EU trade. The chart compares the percentage of trade using road, rail, and waterways.]
Log($S_{nm}$) vs log(Distance)
Small country effect

[Scatter plot showing the relationship between log(Country Size) and log($S_{nm}$). The plot includes three categories: Home, Country, and Foreign, represented by different colors and markers.]
Remoteness effect
$S_{nm}$: Predicted vs data
Border effect for country pairs

![Histogram showing border effect for country pairs]

- Y-axis: Fraction
- X-axis: Border dummies for each country pair

The histogram displays the distribution of border dummies for different country pairs, indicating the effect of borders on trade.
Border effect maps

Border Effects by Country Pair (AT)

- (6,8)
- (5,6)
- (4,5)
- (3,4)
- (2,3)
- (1,2)
- (0.5,1)
- (0.25,0.5)
- [0,0.25]
- No data

Back
Border effect maps

Border Effects by Country Pair (BE)

Legend:
- [6.8]
- [5.6]
- [4.5]
- [3.4]
- [2.3]
- [1.2]
- [0.1]
- [0.025]
- [0.05]
- [0.08]
- No data

Map showing border effects by country pair across Europe.
Border effect maps

Border Effects by Country Pair (BG)
Border effect maps

Border Effects by Country Pair (CH)
Border effect maps

Border Effects by Country Pair (CZ)
Border effect maps
Border effect maps

Border Effects by Country Pair (DK)

Legend:
- (6,8]
- [5,6]
- [4,5]
- [3,4]
- [2,3]
- [1,2]
- [.5,1]
- [.25,.5]
- [0,.25]
- No data
Border effect maps

Border Effects by Country Pair (EL)

[Map showing border effects by country pair with color coding legend: (6.8), (5.6), (4.5), (3.4), (2.3), (1.2), (.5,.1), (.25,.5), [0,.25], No data]
Border effect maps

Border Effects by Country Pair (ES)
Border effect maps

Border Effects by Country Pair (FI)

Legend:
- [6,8]
- [5,6]
- [4,5]
- [3,4]
- [2,3]
- [1,2]
- [0.5,1]
- [0.25,0.5]
- [0,0.25]
- No data

Map showing the border effects by country pair in Europe.
Border effect maps

Border Effects by Country Pair (FR)
Border effect maps

Border Effects by Country Pair (HR)

Legend:
- [6,8]
- [5,6]
- [4,5]
- [3,4]
- [2,3]
- [1,2]
- [0,1]
- [0.25,0.5]
- [0.5,1]
- No data
Border effect maps

Border Effects by Country Pair (HU)
Border effect maps

Border Effects by Country Pair (IE)

[Map of Europe showing border effects by country pair with color coding]

No data
Border effect maps
Border effect maps

Border Effects by Country Pair (NL)

- No data
- [0.25, 5]
- [1, 2]
- (1.5, 1]
- (2, 3]
- (2.5, 4]
- (3, 4]
- (4, 5]
- (5, 6]
- (6, 8]

Back
Border effect maps

Border Effects by Country Pair (NO)
Border effect maps
Border effect maps

Border Effects by Country Pair (PT)
Border effect maps

Border Effects by Country Pair (RO)

- (6,8]
- (5,6]
- (4,5]
- (3,4]
- (2,3]
- (1,2]
- (0,1]
- [0.25, 5]
- [0,0.25]
- No data

[Map of Europe showing border effects by country pair with color coding for different ranges of values]
Border effect maps

Border Effects by Country Pair (SE)

Legend:
- [6.8]
- [5.6]
- [4.5]
- [3.4]
- [2.3]
- [1.2]
- [0.1]
- [0.25, 0.5]
- [0.0, 0.25]
- No data
Border effect maps

Border Effects by Country Pair (SI)

- [6,8]
- [5,6]
- [4,5]
- [3,4]
- [2,3]
- [1,2]
- [0.5,1]
- [0.25,0.5]
- [0,0.25]
- No data
Border effect maps

Border Effects by Country Pair (SK)
Border effect maps
Heterogeneity in border effects

<table>
<thead>
<tr>
<th>Country</th>
<th>Border (Mean)</th>
<th>Border (SD)</th>
<th>Highest (1)</th>
<th>Highest (2)</th>
<th>Highest (3)</th>
<th>Lowest (1)</th>
<th>Lowest (2)</th>
<th>Lowest (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT</td>
<td>-2.93</td>
<td>0.88</td>
<td>-5.24 (FI)</td>
<td>-4.68 (IE)</td>
<td>-3.84 (NO)</td>
<td>-1.45 (DE)</td>
<td>-1.55 (SI)</td>
<td>-1.96 (SK)</td>
</tr>
<tr>
<td>BE</td>
<td>-2.71</td>
<td>1.03</td>
<td>-5.30 (FI)</td>
<td>-4.57 (IE)</td>
<td>-4.32 (NO)</td>
<td>-1.35 (FR)</td>
<td>-1.53 (NL)</td>
<td>-1.68 (CZ)</td>
</tr>
<tr>
<td>BG</td>
<td>-3.18</td>
<td>1.25</td>
<td>-7.84 (NO)</td>
<td>-4.57 (HR)</td>
<td>-3.93 (PT)</td>
<td>-1.21 (IE)</td>
<td>-1.67 (UK)</td>
<td>-2.28 (EL)</td>
</tr>
<tr>
<td>CH</td>
<td>-3.50</td>
<td>0.77</td>
<td>-5.18 (IE)</td>
<td>-4.90 (SI)</td>
<td>-4.88 (HR)</td>
<td>-2.14 (DE)</td>
<td>-2.77 (SK)</td>
<td>-2.77 (BE)</td>
</tr>
<tr>
<td>CZ</td>
<td>-2.58</td>
<td>0.76</td>
<td>-4.07 (IE)</td>
<td>-3.82 (FI)</td>
<td>-3.65 (HR)</td>
<td>-0.84 (SK)</td>
<td>-1.48 (DE)</td>
<td>-1.68 (BE)</td>
</tr>
<tr>
<td>DE</td>
<td>-2.53</td>
<td>1.07</td>
<td>-5.17 (FI)</td>
<td>-4.99 (IE)</td>
<td>-3.92 (NO)</td>
<td>-1.43 (SK)</td>
<td>-1.45 (AT)</td>
<td>-1.48 (CZ)</td>
</tr>
<tr>
<td>DK</td>
<td>-3.18</td>
<td>0.68</td>
<td>-4.61 (FI)</td>
<td>-4.44 (UK)</td>
<td>-4.42 (IE)</td>
<td>-2.28 (BG)</td>
<td>-2.29 (PL)</td>
<td>-2.33 (SE)</td>
</tr>
<tr>
<td>EL</td>
<td>-2.90</td>
<td>1.15</td>
<td>-5.19 (HR)</td>
<td>-4.05 (SE)</td>
<td>-3.83 (ES)</td>
<td>-1.80 (NO)</td>
<td>-2.28 (BG)</td>
<td>-2.36 (UK)</td>
</tr>
<tr>
<td>ES</td>
<td>-3.17</td>
<td>1.10</td>
<td>-5.60 (IE)</td>
<td>-5.18 (FI)</td>
<td>-4.82 (NO)</td>
<td>-1.43 (PT)</td>
<td>-1.70 (FR)</td>
<td>-2.01 (BE)</td>
</tr>
<tr>
<td>FI</td>
<td>-4.47</td>
<td>1.39</td>
<td>-6.50 (PT)</td>
<td>-6.39 (IE)</td>
<td>-6.39 (UK)</td>
<td>-2.60 (BG)</td>
<td>-2.99 (SE)</td>
<td>-3.82 (CZ)</td>
</tr>
<tr>
<td>FR</td>
<td>-3.10</td>
<td>1.12</td>
<td>-5.36 (IE)</td>
<td>-5.06 (FI)</td>
<td>-4.89 (NO)</td>
<td>-1.35 (BE)</td>
<td>-1.70 (ES)</td>
<td>-1.93 (SI)</td>
</tr>
<tr>
<td>HR</td>
<td>-4.11</td>
<td>0.91</td>
<td>-5.87 (IE)</td>
<td>-5.59 (PT)</td>
<td>-5.27 (FI)</td>
<td>-1.91 (SI)</td>
<td>-3.02 (AT)</td>
<td>-3.13 (HU)</td>
</tr>
<tr>
<td>HU</td>
<td>-2.94</td>
<td>0.97</td>
<td>-5.09 (IE)</td>
<td>-4.69 (NO)</td>
<td>-4.29 (FI)</td>
<td>-1.50 (SI)</td>
<td>-1.59 (DE)</td>
<td>-1.72 (SK)</td>
</tr>
<tr>
<td>IE</td>
<td>-4.57</td>
<td>1.47</td>
<td>-6.39 (FI)</td>
<td>-6.19 (PT)</td>
<td>-5.87 (HR)</td>
<td>-1.21 (BG)</td>
<td>-3.31 (UK)</td>
<td>-4.02 (NL)</td>
</tr>
<tr>
<td>IT</td>
<td>-2.98</td>
<td>0.84</td>
<td>-4.93 (IE)</td>
<td>-4.68 (FI)</td>
<td>-4.48 (NO)</td>
<td>-1.88 (SI)</td>
<td>-2.04 (SK)</td>
<td>-2.13 (PL)</td>
</tr>
<tr>
<td>NL</td>
<td>-2.84</td>
<td>0.76</td>
<td>-4.89 (FI)</td>
<td>-4.02 (IE)</td>
<td>-3.93 (NO)</td>
<td>-1.53 (BE)</td>
<td>-1.72 (DE)</td>
<td>-2.08 (PL)</td>
</tr>
<tr>
<td>NO</td>
<td>-4.07</td>
<td>1.17</td>
<td>-7.84 (BG)</td>
<td>-4.97 (IE)</td>
<td>-4.89 (FR)</td>
<td>-1.80 (EL)</td>
<td>-2.13 (SE)</td>
<td>-2.72 (DK)</td>
</tr>
<tr>
<td>PL</td>
<td>-2.73</td>
<td>0.69</td>
<td>-4.13 (HR)</td>
<td>-4.07 (IE)</td>
<td>-3.94 (FI)</td>
<td>-1.58 (DE)</td>
<td>-1.76 (BE)</td>
<td>-2.08 (NL)</td>
</tr>
<tr>
<td>PT</td>
<td>-3.38</td>
<td>1.24</td>
<td>-6.50 (FI)</td>
<td>-6.19 (IE)</td>
<td>-5.59 (HR)</td>
<td>-1.43 (ES)</td>
<td>-2.11 (SK)</td>
<td>-2.20 (FR)</td>
</tr>
<tr>
<td>RO</td>
<td>-3.25</td>
<td>0.66</td>
<td>-4.70 (FI)</td>
<td>-4.32 (HR)</td>
<td>-4.27 (NO)</td>
<td>-2.28 (BE)</td>
<td>-2.43 (HU)</td>
<td>-2.48 (UK)</td>
</tr>
<tr>
<td>SE</td>
<td>-3.65</td>
<td>0.79</td>
<td>-5.39 (IE)</td>
<td>-4.97 (UK)</td>
<td>-4.64 (FR)</td>
<td>-2.13 (NO)</td>
<td>-2.33 (DK)</td>
<td>-2.86 (PL)</td>
</tr>
<tr>
<td>SI</td>
<td>-2.86</td>
<td>1.11</td>
<td>-5.01 (IE)</td>
<td>-4.90 (CH)</td>
<td>-4.30 (NO)</td>
<td>-1.31 (SK)</td>
<td>-1.50 (HU)</td>
<td>-1.54 (DE)</td>
</tr>
<tr>
<td>SK</td>
<td>-2.60</td>
<td>1.00</td>
<td>-5.64 (IE)</td>
<td>-3.91 (FI)</td>
<td>-3.51 (HR)</td>
<td>-0.84 (CZ)</td>
<td>-1.31 (SI)</td>
<td>-1.43 (DE)</td>
</tr>
<tr>
<td>UK</td>
<td>-3.37</td>
<td>1.03</td>
<td>-6.39 (FI)</td>
<td>-4.97 (SE)</td>
<td>-4.78 (NO)</td>
<td>-1.67 (BG)</td>
<td>-2.29 (PL)</td>
<td>-2.36 (EL)</td>
</tr>
</tbody>
</table>
## Home bias: determinants

**Table: Home Bias: Determinants**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Home</td>
<td>Home</td>
<td>Home</td>
</tr>
<tr>
<td>Log(Distance)</td>
<td>-0.0171</td>
<td>0.229**</td>
<td>-0.0266</td>
</tr>
<tr>
<td></td>
<td>(0.145)</td>
<td>(0.0904)</td>
<td>(0.187)</td>
</tr>
<tr>
<td>Log(European Remoteness)</td>
<td>2.345***</td>
<td>1.353***</td>
<td>1.551***</td>
</tr>
<tr>
<td></td>
<td>(0.265)</td>
<td>(0.194)</td>
<td>(0.466)</td>
</tr>
<tr>
<td>Island Region</td>
<td>1.872***</td>
<td>0.915**</td>
<td>0.988***</td>
</tr>
<tr>
<td></td>
<td>(0.509)</td>
<td>(0.364)</td>
<td>(0.328)</td>
</tr>
<tr>
<td>Mountain Region</td>
<td>0.304**</td>
<td>0.154**</td>
<td>0.193**</td>
</tr>
<tr>
<td></td>
<td>(0.118)</td>
<td>(0.0722)</td>
<td>(0.0831)</td>
</tr>
<tr>
<td>Major Port Region</td>
<td>-0.197</td>
<td>-0.127</td>
<td>-0.193</td>
</tr>
<tr>
<td></td>
<td>(0.129)</td>
<td>(0.0722)</td>
<td>(0.0831)</td>
</tr>
<tr>
<td>Motorway Density</td>
<td>-6.379***</td>
<td>-6.510***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.179)</td>
<td>(1.454)</td>
<td></td>
</tr>
<tr>
<td>Log(Population)</td>
<td>-0.819***</td>
<td>-0.758***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0488)</td>
<td>(0.0590)</td>
<td></td>
</tr>
<tr>
<td>Share of Emp. (Manuf.)</td>
<td>-10.48***</td>
<td>-10.01***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.174)</td>
<td>(1.905)</td>
<td></td>
</tr>
<tr>
<td>Share of Emp. (Public)</td>
<td>-16.84***</td>
<td>-0.410</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.634)</td>
<td>(3.917)</td>
<td></td>
</tr>
<tr>
<td>Sh. Secondary or tertiary educ</td>
<td>1.511***</td>
<td>-1.399</td>
<td>-1.399</td>
</tr>
<tr>
<td></td>
<td>(0.398)</td>
<td>(0.903)</td>
<td>(0.903)</td>
</tr>
<tr>
<td>Share Migrant Pop.</td>
<td>-2.287***</td>
<td>-0.386</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.500)</td>
<td>(0.702)</td>
<td></td>
</tr>
<tr>
<td>Country FE</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Observations</td>
<td>269</td>
<td>265</td>
<td>265</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.410</td>
<td>0.799</td>
<td>0.890</td>
</tr>
</tbody>
</table>

Standard errors in parentheses

* $p < .1$, ** $p < .05$, *** $p < .01$