

The Importance of Geography for Firm-Level Exports

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Work in progress!

1. THE ISSUE

Empirical work on the explanations of trade patterns at the aggregate country level rely on the use of the gravity equation. However, **at the firm level**, the issues that have been addressed in the empirical trade literature focus on the firm's performance on the export market but **do not incorporate geography** (Bernard and Jensen 1999, 2001; Roberts and Tybout, 1997; Aw and Hwang, 1995).

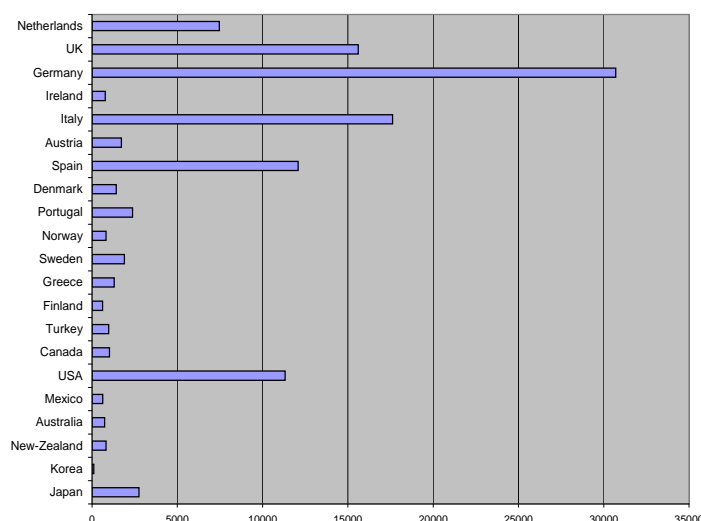
In this paper, we propose to deepen the understanding of trade patterns at the firm level by exploring **the determinants of the firm's export decision to a given country**.

We use a data set constructed by the French customs which contains **the amount of exports by French firms in 1992, with the destination country**.

2. TWO ASPECTS TO BE EXPLORED

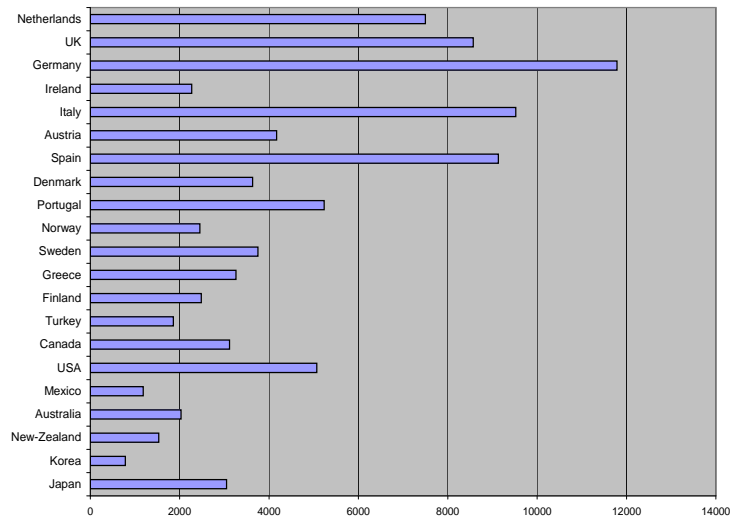
We explore two aspects of the export activity of firms: we first look at the determinants of the amount exported by a firm to a given country. This issue consists in applying a gravity equation derived from theory to firm level export flows.

Figure 1: Total amount exported to each country - (in mio USD)



Second, we investigate the determinants of the export decision of a firm to a given country. In this part of the paper we use a probit model to analyse the relative importance of the different determinants in the export decision of a firm to a particular market.

Figure 2: Number of exporters to each country



3. THEORETICAL FRAMEWORK

Our specification is drawn from the **trade model in monopolistic competition with heterogeneous firms by Melitz (2002)**. We use the demand equation, which gives the amount exported by a firm i to a country j :

$$r_{ij} = \left(\frac{\sigma}{\sigma - 1}\right)^{1-\sigma} \frac{w_i^{1-\sigma} \tau_{ij}^{1-\sigma}}{\varphi_i^{1-\sigma} P_j} Y_j$$

4. GRAVITY ESTIMATIONS AT THE FIRM LEVEL Taking logs on both side, the estimable equation becomes:

$$\ln r_{ij} = a + (1 - \sigma) \ln w_i + (1 - \sigma)\theta \ln d_{ij} - (1 - \sigma) \ln \varphi_i - \ln\left(\sum_{j=1}^N \sum_{k=1}^{n_k} p_{jk}^{1-\sigma}\right) + \ln Y_j + \varepsilon_{ij}$$

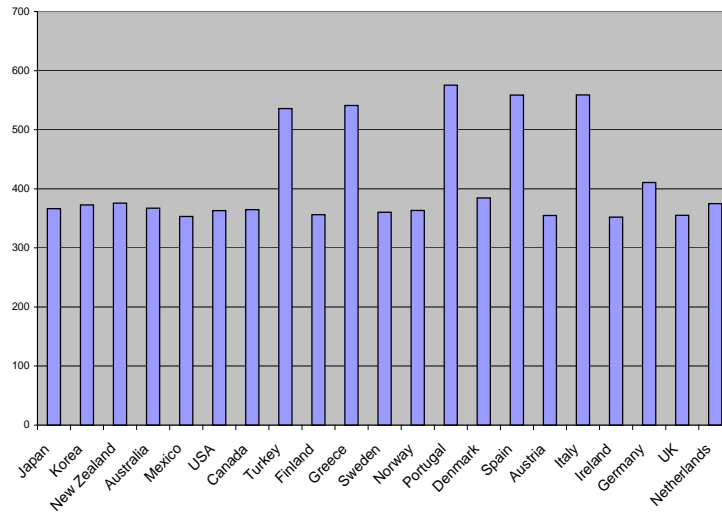
	All firms (1)	All firms (2)	All firms (countries f.e.) (3)	All firms (countries f.e.) (4)	All firms (Both f.e.) (5)
Wage	-0.108 (0.026)	0.408 (0.027)	-0.046 (0.026)	0.520 (0.027)	-0.031 (0.028)
Distance	-0.330 (0.006)	-0.318 (0.006)	-0.392 (0.031)	-0.316 (0.032)	-0.407 (0.030)
Productivity	0.728 (0.011)	0.527 (0.012)	0.787 (0.011)	0.564 (0.011)	0.786 (0.012)
Size (firm)	0.722 (0.004)	0.680 (0.005)	0.766 (0.004)	0.667 (0.005)	0.768 (0.005)
GDP	0.244 (0.004)	0.311 (0.004)			
N	90 400	91546	91546	91546	91546
R ²	0.2491	0.2094	0.2863	0.2118	0.3029

→ Two complementary measures of distance: **intradist** and **interdist** !

5. PROBIT ON THE EXPORT DECISION

Average distance that separates firms from the border, according to the export market:

Figure 3: Average intradist



The figure shows some insights into the location of firms with resp. to their export market:

1. The average distance between a firm and the border to its export market seems relatively stable, around 350 kms, but for Mediterranean countries. Firms that export to Mediterranean countries (Turkey, Greece, Portugal, Spain and Italy) are located further away from the border than other firms.
2. The previous characteristic may convey the fact that firms are not all located in the same region, because the exit-cities we consider are very different.
3. According to the graph, there does not seem to be a different effect of distance between countries. We might have thought that being close to the border would have been important in the case of Germany or the Netherlands but not so much for remote countries (Japan, Australia..).

	All firms (1)	All firms (fixed effects) (2)
	Dep. var.: Export decision	
Size (firms)	0.317 (0.002)	0.307 (0.002)
Productivity	0.139 (0.002)	0.163 (0.002)
Distance	-0.413 (0.002)	0.127 (0.016)
GDP	0.196 (0.001)	
N	353 199	353 199
R^2	0.1607	0.1991