Private requirements by European retailers: impact on French exporters

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Private Requirements by European Retailers : Impact on French agri-food exporters

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SEVENTH FRAMEWORK PROGRAMME

AgFoodTrade
New Issues in Agricultural, Food & Bioenergy Trade

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Context 1- A development of standards in EU

- **An harmonisation of public standards in the food sector, notably at the European level :**
  - A major step in this process : the European « Food Law » (2002)
    - Responsability of the actors within the food supply chain
    - Traceability of the product
- **A specific instrument of quality assurance within the food supply chain =**
  - ➢ Private standards through third party certification
- **Various types of private standards**
  - collective standards (AFNOR, ISO)
  - private standards introduced by big companies themselves (Nestlé : NQS)
  - ▶ standards imposed by retailers to their suppliers (BRC, IFS,GlobalGap…)

Context 2- A growing market power of retailers

- **In Europe, retailers play a key role in the food chain**
  - In Finland : they sell ≈ 89% of food products to final consumers
  - In Great Britain : ≈ 80% - Germany : ≈ 67% - France : ≈ 65%
  - In Poland : ≈ 20%

- **They also play an active role in the production of final goods : by developing their own private label**
  - 10-40% of retail food sales in EU countries (C. Bontemps et al., 2008)
  - a differentiation tool between retailers.

Context 3: What is the impact of private standards on trade?

- **A growing literature on developing countries :**
  - New barriers to trade at entry to developed markets
  - Conversely, standardization and certification reduce
    - transaction costs
    - upgrade the quality of the exported products
    - and thus enhance market access and competitiveness
  - Trade, standards and impact on the supply chain of the developing countries
    - Marginalization of small businesses, excluded from the export chain
  - Trade, standards and poverty
  - ➢ Majority of works : case studies or surveys

- **Few (no) papers focus on trade of developed countries and on export behavior of firms**
  - ➢Our paper : impact on French agri-food exports

Context 4- still a fragmentation of the EU market.

•Despite positive impact of harmonisation (Henry de Frahan and Vancauteren, 2006), persistence of market fragmentation (Head and Mayer, 2000 and Chen and Novy, 2009)

- Chevassus-Lozza and Latouche (2008) :
  - Access to EU markets for French agri-food firms is explained by
    - distance, size, intensity of the competition in the importing country
    - AND remaining trade costs at entry to the different EU markets.

- **One can suppose that these remaining trade costs correspond to**
  - product compliance, information on new markets, building new networks…

➢ market structure of the importing country and the way retailers impose their requirements (private standards)

The impact of certification : two main assumptions

The adoption of a certification by a firm can impact its access to export market through two channels :

- H1: an increase of its productivity (adoption of a new organisation)

Melitz (2003) shows that there is a firm selection to export.

Only the most productive firms do export and are able to overcome trade costs.

⇨ A link between export status and firm's productivity

- H2: a decrease of trade costs (transaction costs, information costs, network access…)

Chaney (2008) shows that there is a firm selection specific to each market: a productivity threshold is market specific

⇨ A link between productivity threshold and trade costs specific to a market

Two certifications analysed in this paper (processed products)

- **British Retail Consortium requirements (BRC)**
  - Created in 1998 by British Retailers
  - Most of the British retailers : necessary condition to contract with a supplier
  - Version 4: 226 requirements

    6 categories: HACCP; Quality management system, Environmental consideration about production site; controle of products; of production process; humane ressource
- **International Food Standard (IFS)**
  - Created in 2002 by German Retailers
  - Adopted by the French Federation of retailers in 2003
  - A basic requirement for supplier of products sold with the retailer brand
  - Version 4: Requirements: HACCP; Quality management systems; direction implication; ressource management; production process

It is necessary to work at the firm level…

- **Private standards = part of a commercial agreement between two parties**
  - Contrary to public standards which are applied to all trading partners
  - => **necessary to work at the firm level**

- **A detailed dataset on French agri-food firms – EAE database**
  - A compulsory and exhaustive survey made by the INSEE
  - Firms located in France with more than 20 employees
  - Main activity of the firm (NACE code), total sales, exports, nb of employees, VA, K, I, and accounting data

    ⌦ **2942 French agri-food firms in 2007**

… to analyse the export behaviour of certified firms

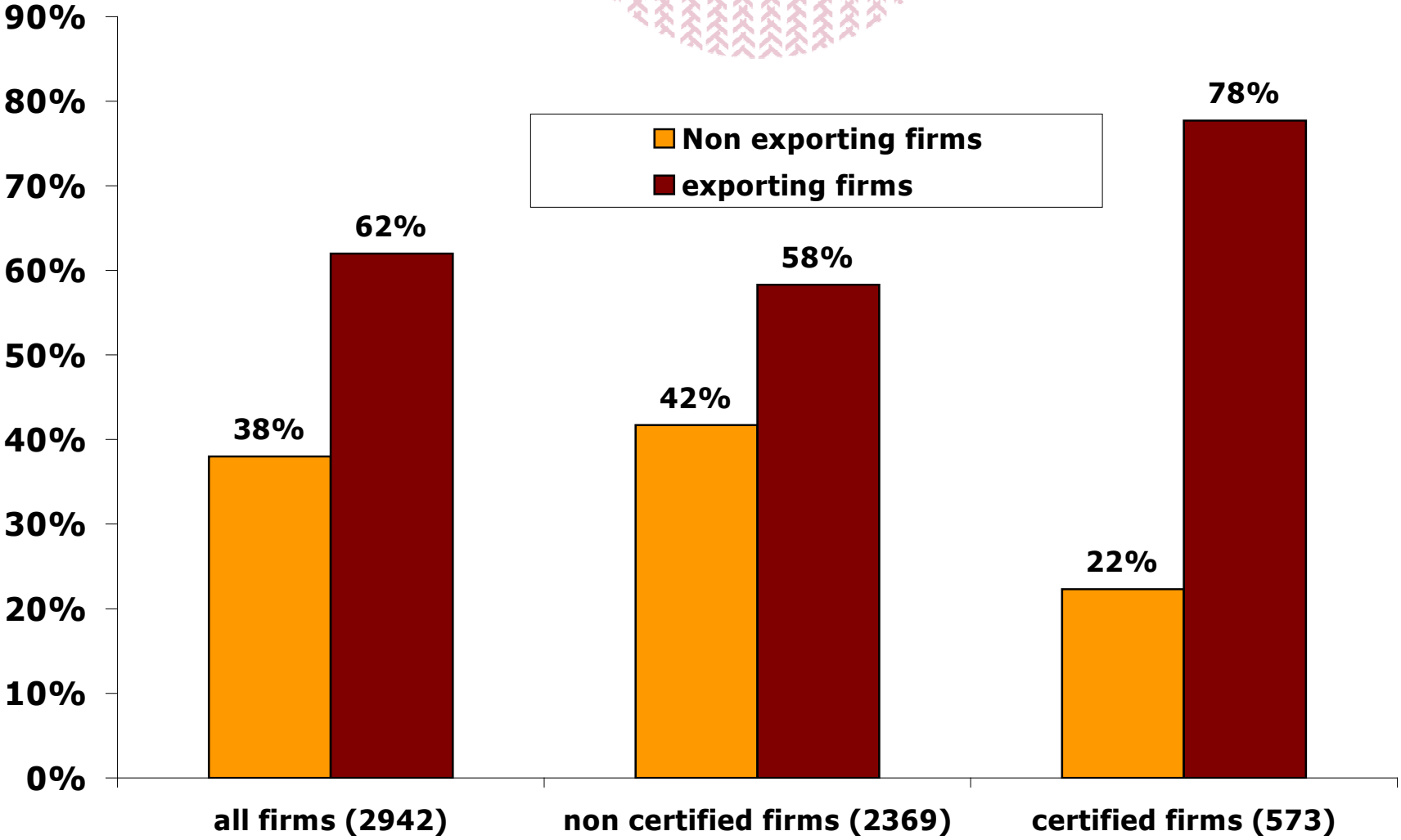
- **The register of French customs identifies**
  - All French exporters (importers) whatever their size
  - The destination (origin) of their exports (imports) per product (NC8), value

- **The list of French plants which are IFS (or/and) BRC in 2007**
  - Official website of the two standards
    - ⌦ **842 certified firms in 2007 (573 in the EAE database)**

Certified firms in the French agri-food sector, 2007

Number of firms in 2007	Non certified firms [1]		Certified firms [2]		% of cert firms [2]/[1]+[2]
Processing of meat products	803	34%	**109**	19%	12%
Processing and preserving of fish	112	5%	**28**	5%	20%
Proc. and preserving of F&V	108	5%	**58**	10%	35%
Manufacture of oils and fats	25	1%	**2**	0%	7%
Manufacture of dairy products	179	8%	**115**	20%	39%
Manuf. of grain mill products	86	4%	**19**	3%	18%
Manuf. of prepared animal feeds	193	8%	**4**	1%	2%
Manufacture of other food prod.	556	23%	**166**	29%	23%
Manufacture of beverages	307	13%	**72**	13%	19%
Total Agri-food Sector	**2369**	**100%**	**573**	**100%**	**19%**

Export status of French agri-food firms – 2007



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H1: Are certified firms more productive and more export-oriented than the others?

- **Our questions :**
  - In comparison to firms of the same sector, and of same level of productivity, do certified firms export more ?
- **Methodology :**
  - Propensity score matching: firms matched on their characteristics.

  ⇨Three categories of firms : certified firms, matched firms non certified, non matched firms – Analysis by type of certification
  - Test for different covariates
  - To sum up the characteristics of the firm: the Total Factor Productivity estimated using Olley and Pakes (1996) methodology

BRC certification
Certified firms are more productive…

		Matched Non BRC		BRC		Unmatched
Processing and preserving of meat products	**Productivity**	114.5	≈	**114.6**	>	72.5
Processing and preserving of fruit and vegetables	**Productivity**	128.0	≈	**131.6**	>	83.3
Manufacture of dairy products	**Productivity**	142.4	≈	**144.7**	>	86.5
Manufacture of other food prod.	**Productivity**	112.7	≈	**114.80**	>	81.7
Manufacture of beverages	**Productivity**	134.4	≈	**135.4**	≈	131.9

… and BRC firms export more than the others, and more than firms of same productivity level

		Matched Non BRC	BRC	Unmatched
Processing and preserving of meat products	**Productivity**	114.5	**114.6**	72.5
	Export rate %	5.6	< **14.6** >	5.1
Processing and preserving of fruit and vegetables	**Productivity**	128.0	**131.6**	83.3
	Export rate %	16.2	< **18.6** >	16.1
Manufacture of dairy products	**Productivity**	142.4	**144.7**	86.5
	Export rate %	8.9	< **16.9** >	8.4
Manufacture of other food prod.	**Productivity**	112.7	**114.80**	81.7
	Export rate %	15.8	< **19.5** >	10.3
Manufacture of beverages	**Productivity**	134.4	**135.4**	131.9
	Export rate %	19.3	< **29.2** >	21.5

IFS certification
Certified firms are more productive…

		Matched Non IFS		IFS		Unmatched
Processing and preserving of meat products	**Productivity**	106.2	≈	**106.7**	>	67.5
Processing and preserving of fruit and vegetables	**Productivity**	119.8	≈	**122.3**	>	80.3
Manufacture of dairy products	**Productivity**	134.4	≈	**136.9**	>	78.4
Manufacture of other food prod.	**Productivity**	109.6	≈	**112.9**	>	76.1
Manufacture of beverages	**Productivity**	140.1	≈	**137.9**	≈	128.9

… but IFS firms export **much less** than the others

		Matched Non IFS		IFS		Unmatched
Processing and preserving of meat products	**Productivity**	106.2		**106.7**		67.5
	Export rate %	8.4	≈	**7.3**	>	4.8
Processing and preserving of fruit and vegetables	**Productivity**	119.8		**122.3**		80.3
	Export rate %	19.1	>	**13.5**	<	16.5
Manufacture of dairy products	**Productivity**	134.4		**136.9**		78.4
	Export rate %	15.7	>	**11.2**	≈	10.2
Manufacture of other food prod.	**Productivity**	109.6		**112.9**		76.1
	Export rate %	18.1	>	**11.6**	≈	10.3
Manufacture of beverages	**Productivity**	140.1		**137.9**		128.9
	Export rate %	24.2	>	**22.0**	≈	22.8

H2: What is the impact of certification on the costs to access some EU markets? an application of Chaney's model

- **Two sources of heterogeneity**
  - **Firms** distinguished according to their productivity level φ (pareto distribution γ)
  - **Markets** : To sell on a market, firms have to face costs specific to this market
    - fixed (f_j) : compliance costs, networks implementation, knowledge of the markets….
    - variable (τ_j) : transport, exchange rate…

$$\overline{\varphi}_j = \lambda_1 \left(\frac{Y}{E_j} \right)^{1/\gamma} \left(\frac{w \tau_j}{\theta_j} \right) (f_j)^{1/(\sigma-1)}$$

Share of the importing country in the world import

Multilateral resistance index

Our assumption

- **This productivity threshold depends on the market structure**
  - Fixed costs depend on the networks firms can access to.
  - Thus, we expect that:
    - the productivity threshold will be reduced because of certification
    - for certified firms (accessing retailer network), the probability to export will be higher
- **Our empirical strategy :** the estimation of the productivity threshold
  - Probability of firms to export to market j

$$\begin{cases} Y_{ij} = 1 \quad if \quad \varphi > \overline{\varphi}_j \\ Y_{ij} = 0 \quad if \quad \varphi \leq \overline{\varphi}_j \end{cases}$$

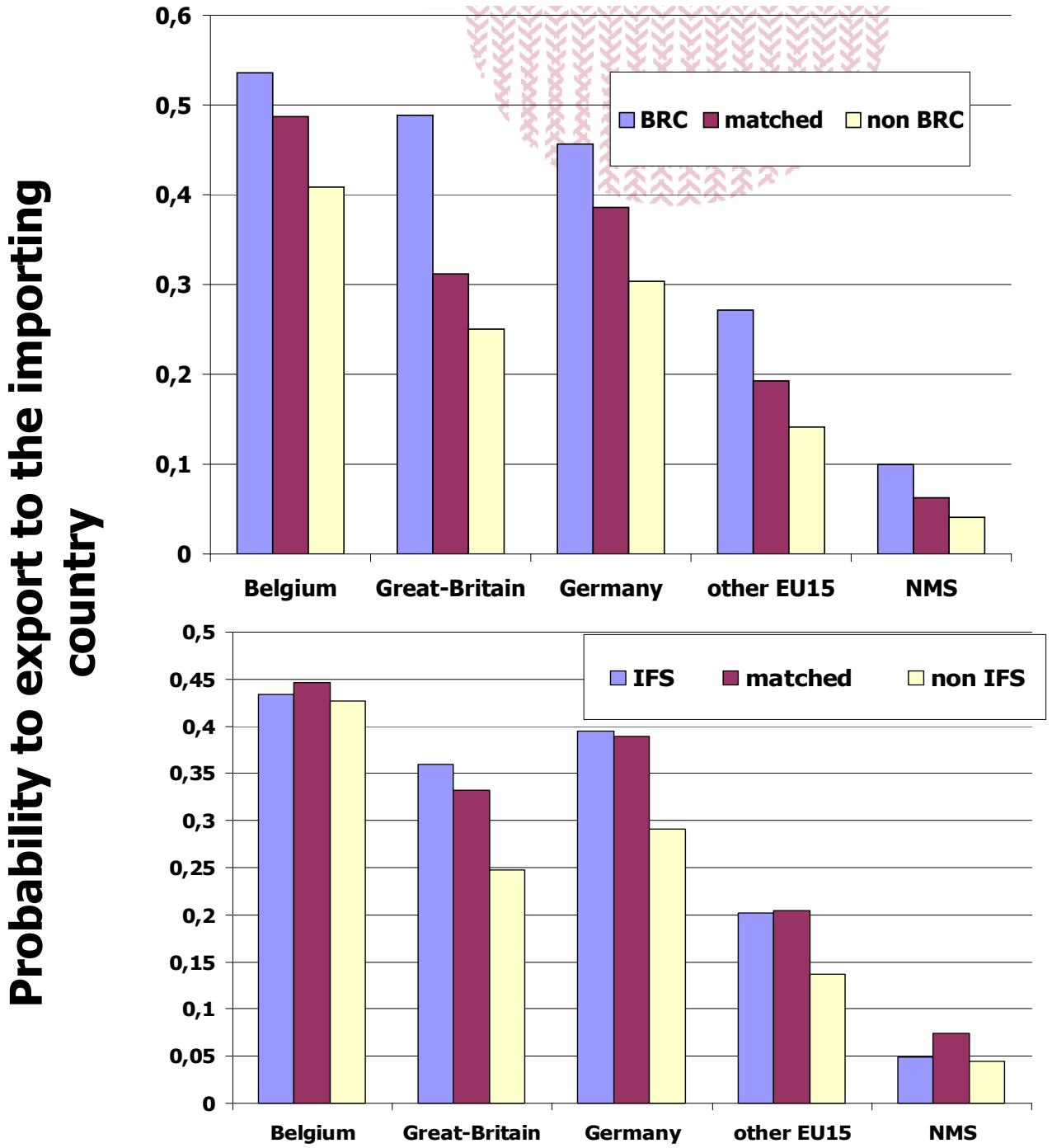
$$P(Y_{ij} = 1) = P(\varphi > \overline{\varphi}_j) = \left(\overline{\varphi}_j\right)^{-\gamma}$$

⇨ With the MLM, we compute the threshold at entry to each EU market

⇨ And then generate the associated probability to export to each market

Results : impact of certification on the productivity threshold

	Impact of BRC			Impact of IFS		
Importing country size	-0.138 (0.006)			-0.142 (0.006)		
Distance	0.078 (0.007)			0.081 (0.006)		
Potential supply of the competiting countries	-0.031(0.010)			-0.037 (0.010)		
	Country fixed effects : Belgium as reference					
	BRC	**matched**	**Non BRC**	**IFS**	**matched**	**Non IFS**
Great-Britain	.0932 (0.016)	.2469 (0.032)	.2826 (0.014)	0,176 (0.018)	0,212 (0.024)	0,286 (0.015)
Germany	.0857 (0.018)	.1501 (0.027)	.2017 (0.013)	0,118 (0.017)	0,130 (0.021)	0,217 (0.014)
Other EU15	.0697 (0.011)	.1899 (0.016)	.2631 (0.010)	0,142 (0.012)	0,145 (0.013)	0,271 (0.011)
New Member States	.3188 (0.020)	.4885 (0.029)	.5968 (0.015)	0,535 (0.021)	0,399 (0.022)	0,563 (0.015)
Constant	3.328 (0.04)			3.317 (0.04)		
Observations	75164			75164		
	Ll: -25474.55	Wald Chi2(19) : 10995.36		Ll : -25587.068	Wald Chi2 (19) :10442.24	


Probability to export to the importing country
0,6
0,5
0,4
0,3
0,2
0,1
0
BRC
matched
non BRC
Belgium
Great-Britain
Germany
other EU15
NMS
0,5
0,45
0,4
0,35
0,3
0,25
0,2
0,15
0,1
0,05
0
IFS
matched
non IFS
Belgium
Great-Britain
Germany
other EU15
NMS

Conclusions (1/3)

- **BRC : requirement imposed by British retailers**
  - BRC firms are more productive
  - In comparison to firms of same productivity level, they export more
    - the certification would play through two channels
      - An increase of the productivity
      - A decrease of the fixed export costs
  - BRC firms are more export oriented to this market than the others

  ⇨**BRC Certification** : an objective included in the export strategy of the firms

- **IFS : requirement imposed by German and French retailers**
  - IFS firms are more productive
  - IFS Certification : not discriminating in terms of export strategy

  ⇨**IFS Certification** : not an objective included in the export strategy

Conclusions (2/3)

Private standards : a barrier at entry to markets?

•BRC is not a sine qua non condition for French exporters to export to GB

- non certified firms access to this market
- but their probability to export is much lower

• Can we extend the conclusions for exporters from developing countries?

- Note that French firms implement EU public standards (a condition to produce and export on the Single EU market)
- Private standards for developing countries = quality assurance for EU importers

Conclusions (3/3)

To go further

- Not only identify exporters BUT also the importers and their relations with the retailers
- Identify the year of firm's certification in order to introduce dynamics in the analysis
- Compare data for France to other countries
  - Is IFS a trade barrier at entry to French market?

The multilateral resistance index

$$\left(\theta_j^s\right)^{-\gamma_s} = \underbrace{\sum_{k=1}^{N} \left(Y_k^s / Y^s\right) \times \left(w_k \tau_{kj}^s\right)^{-\gamma_s}}_{[1]} \times \underbrace{\left(f_{kj}^s\right)^{-\left(\frac{\gamma_s}{\sigma-1}-1\right)}}_{[2]}$$

- **Part 1 :** supply by potential partners (weighted by distance from k to j, taking into account common language, common border or common history)
- **Part 2 :** fixed costs at entry of market j => importing country fixed effects