History matters for the export decision and the volume exported: firm-level evidence from French agri-food firms.

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Introduction

Hysteresis in export behaviour has often been highlighted in international economics. Firms entering an international market a given year are more likely to be exporters the year after. This fact is traditionally interpreted as a consequence of sunk export costs at entry to the international market.

- Persistence is substantial on all destination markets from the French agribusiness firms’ point of view. Are there several types of markets regarding this persistence? What is the origin of the persistence: state variable dependence, or unobserved heterogeneity? In the behaviour on each market independent of the behaviour on the other market or is there a link?

This paper proposes to take into account both the complete behaviour of exporters (export decision and volume traded) and the destination markets (through the identification of several groups). We work on a balanced panel of continuously operating firms in France in agribusiness sector from 1997 to 2005. The econometric specification leads to a multivariate dynamic panel model of French agribusiness firms' exports to two aggregate markets (EU and Rest of the World) is specified.

Empirical facts and persistence

Table 1 shows the persistence in value exported according to the destination. We have split our sample of exporters in 4 categories according to their export value and show the transition rates according to the category of exporters they belong to.

<table>
<thead>
<tr>
<th>Year</th>
<th>EU</th>
<th>ROW</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>0.6</td>
<td>0.4</td>
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<tr>
<td>1998</td>
<td>0.7</td>
<td>0.3</td>
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<td>1999</td>
<td>0.8</td>
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<tr>
<td>2000</td>
<td>0.9</td>
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</table>

The size of the export the current year appears as linked to the size of export the year before.

From theory to econometrics

Based on Roberts and Tybout (1997) or Cragg (2004), we propose two extensions for these models:

- we allow for taking into account the final destination of the export (subscript j) included in the model of firm i. According to the export market, the role of previous experience will be revealed:
  - the previous experience considered is not only the name of the firm regarding export to a specific market \( y_{ijt-1} \), but it also includes the value traded to this foreign market \( y_{ijt-1} \), through \( H_{ijt-1} \) (defining the knowledge of the network the previous year in this country).
  - the participating condition becomes: With \( y_{ijt} \) fixed costs to become exporters, \( y_{ijt} \) fixed costs of entry and \( G_{i} \) fixed costs of exit specific to market.

Econometric specification:

\( Y_{ijt} \) represent the observed exports of firm \( i \) (\( i = 1, 2, \ldots, N \)) to market \( j \) in year \( t \) (\( j = 1, 2, \ldots, J \)). Hence we observe the following \( Y_{ijt} = \text{value of export of firm } i \text{ toward country } j \text{ in time } t \).

To fully account for the lagged observed value, we introduce function \( g() \), a vector function defined as follows:

\[
g(\theta) = (\theta_1 y_{ijt-1}| H_{ijt-1} \theta_0)
\]

A multivariate dynamic panel model of French agribusiness firms' exports to two aggregate markets (EU and Rest of the World) is specified.

The model accounts for both zero level and positively skewed exports by adopting the Cragg (1971) logit-form Tobit model. Unobserved firm-level heterogeneity is accounted for by introducing random effects which may be correlated across export markets.

The initial conditions problem is treated by assuming that a component of the unobserved firm effect is conditional on initial values and exogenous variables (Wooldridge, 2005).

Main results (ctnd):

- The unobserved persistence:
  - The temporal correlation of the composite error term is not negligible. This confirms as in (as Roberts and Tybout, 1997) that the permanent unobserved firm effects are at play in the persistence we observe. Unobserved heterogeneity is substantially larger for exports outside EU.

- The previous export experience in both markets: key determinant of the current export (decision and volume).
  - From the estimation, a threshold below which the export is not observed the following \( Y_{ijt} \), through \( H_{ijt} \)

Table 3: Predicted value and value exported according to the destination

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Data

Data concerning individual French agribusiness firms for the years 1996 to 2005 from two main sources:

- The French National Institute of Statistics (INSEE): annual data collected in a survey which is compulsory for all firms located in France with more than 20 employees or with total sales of over 5 million €, a wide range of variables including the main activity of the firm (NACE code), total sales, the number of employees, investment, location and some accounting data.

- The register of French Customs, which identifies the destination of exports per product (at the 8-digit level of the combined nomenclature) by value and quantity for each exporting firm. Each firm is identified by its identification number (SIREN code).

Literature cited


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For further information

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