LA LETTRE DU CEPII
No 271 — October 2007
CENTRE D'ETUDES PROSPECTIVES ET D'INFORMATIONS INTERNATIONALES

The very select club of exporting firms

Globalization is everywhere. At least, that's the impression that it gives: more and more countries are opening up to international trade and fewer and fewer sectors seem to be protected from international competition. This impression correctly matches traditional analyses, which consider that international trade is a matter of specialisation between sectors and mainly focus on barriers such as customs duties and transport costs. But access to fine grain data, at the level of each exporting firm, reveals a quite different landscape and enables us to paint a more accurate and more finely shaded picture of globalization. Analysis of the Custom and Excise and INSEE databases shows that the proportion of French firms that have a direct export activity is astonishingly low and that these businesses are clearly distinguished from the others: they are larger, more productive and pay their employees higher wages. In order to understand the real extent of the internationalisation of markets and better identify the barriers that really stand in the way of the export capacities of a country like France, we need to turn the spotlight on these "stars", which are the driving forces of globalization.

Point of view and images of globalization

Most of the theoretical tools available to us for analysing the increasing power of international trade either implicitly or explicitly consider that all firms are identical. In the last few years, several theoretical models have reconsidered this assumption of homogeneousness[1]. They are based on a set of simple and intuitive hypotheses. They assume that firms differ from each other in terms of productivity and that, in order to export, each one must bear not only a variable cost (transport costs and customs duty ad valorem), but also a fixed cost. This latter is related, for example, to the advertising of products, the search for a commercial partner, the setting up of customs declaration procedures and new accounting methods, the translation of instruction sheets and catalogues and, in some cases, converting the product to the standards of the importing countries. Under these conditions, a selection of firms takes place. Not all of the firms export: only the most productive, those that can expect to make large enough sales abroad to cover these fixed costs, launch themselves on the export markets.

This very simple theoretical framework has important implications. On the one hand, it emphasises the fact that international opening does not only result in specialisations between sectors; opening also drastically changes the economic relations within each sector between the businesses that are able to take advantage of the new opportunities and those that simply suffer from the increased competition. On the other, this framework highlights the importance of the fixed cost of exporting. Over and above the cost of transport and customs duties, a large number of small barriers to trade add up to increase the cost of access to world markets and in the end limit the number of exporting firms. Therefore, trade integration is not limited to the lowering of customs duties and quotas, which mainly influence the values of each exporter's sales, but also concerns the reduction of the more informal barriers that make up the fixed costs of exporting.

The VIP circle

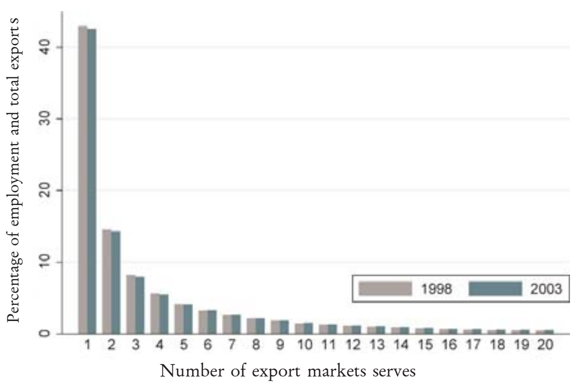
Various studies using American, and more recently European[2], data have highlighted the selection effect described by the theory. The conclusions follow the same pattern for all of the countries: internationalisation only concerns a limited proportion of businesses. Analysis of the French data clearly confirms this finding.

1. The models are mainly based on the theoretical framework proposed by Marc Mélitz: M. Mélitz (2003), "The impact of Trade on Aggregate Industry Productivity and Intra-Industry Rellocations", *Econometrica*, 71(6): 1695-1725. See also S. Jean (2002), "International Trade and Firms Heterogeneity Under Monopolistic Competition", *Open Economies Review*, 13(3): 291-311.
2. A. Bernard & B. Jensen (1999), "Exceptional Exporter Performance: Cause, Effect, or Both?", *Journal of International Economics*, 47 : 1-25. T. Mayer & G.I.P. Ottaviano (2007), "The happy few: the internationalisation of European firms", *Bruegel Blueprint Series*.

In 2003, French Customs and Excise listed a few more than 113,500 businesses that exported primary or manufactured goods, with an average exported value of 3.15 million Euros, but a median value that did not exceed 50,000 Euros[3]. More than 100,000 exporters is certainly a large number in absolute terms but it only represents 4.4% of all French businesses. If we exclude the service companies that do not play a part in the export of goods, this proportion remains low and shows to what extent the exporters' club is selective. It includes 9.2% of businesses in the agricultural, industrial, construction and commercial sectors and 19.1% of these businesses with the commercial sector excluded. Using even more detailed data for 1986, Eaton, Kortum and Kramarz put forward a comparable order of magnitude, around 17% of exporting firms in the manufacturing[4] sector.

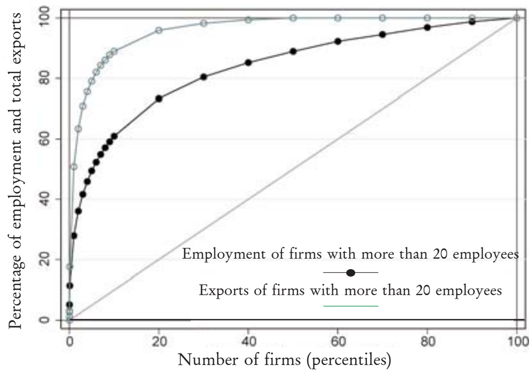
Many of the firms amongst these exporting businesses are only very marginal players on the international markets, either because they only export to a very few countries or because the value exported is very low. Graph 1 illustrates the first point: 57% of French exporters are only present on one or two markets and in reality 42% only export to a single country, most often Belgium, Switzerland or Germany. For half of French exporters, presence on international markets comes down to selling part of their production in the neighbouring country, so that in reality only a few tens of thousands of French firms have export activities that cover a larger geographical area. Analysis of the value of export flows leads to the same type of conclusion: most exporters declare very low flows, which means that the main part of French international trade is

Graph1 – Proportion of exporting firms trading with at most 1 to 20 foreign countries



Interpretation: more than 42% of French exporters only trade with one foreign market; about 15% only export to two countries.
Source: French Customs and Excise statistics, CEPII calculations.

Graph 2 – Inequalities between the firms, in terms of jobs and exports



Interpretation: amongst the French firms with more than 20 employees, the 20% biggest exporters are responsible for 94% of total exports, but the 20% biggest employers only represent about 75% of total jobs.
Source: French Customs and Excise statistics and Annual Business Survey (INSEE), CEPII calculations.

due to a small number of very large exporters. In 2003, 1% of exporting businesses were responsible for about 68% of France's exports and the 10% of largest exporters were responsible for 94% of exports. Obviously, the origin of this very high concentration of export flows can be found in the inequalities that we can observe in the size of businesses. However, graph 2 shows that the concentration of export flows is clearly more pronounced than that of jobs. Another explanation of the high inequality between exporters can be found in the dispersion of intensities of exporting. In practice, only 9% of exporting firms with more than 20 employees make more than half of their turnover from exports; conversely, for about 60% of exporting firms with more than 20 employees, the sales abroad only represent 5% of turnover.

In short, the extreme concentration of individual export flows, in terms of geographical coverage and value of flows, is a significant fact that merits particular attention. Not only do exporting firms form a quite restricted club of "stars", but the group of "superstars" - those exporters capable of reaching a large number of countries and doing a large part of their business abroad - form a terribly selective VIPcircle. This clearly illustrates to what extent the fact of studying international trade at the level of businesses deeply affects the traditional analyses. Whereas the questions of competitiveness, comparative advantages or trade deficits are most commonly dealt with from a purely macro-economic or sector based point of view, we should keep in mind the fact that more than two thirds of the exports of a country like France (which is, let's remember, the world's fifth largest exporter) are due to only about a thousand businesses.

3. For reasons of the availability of statistics, our analysis mainly covers 2003. Note that the Customs and Excise statistics do not trace all of the export flows. A large part of the intra-EU flows are not declared.
4. J. Eaton, S. Kortum & F. Kramarz (2004), "Dissecting Trade Firms, Industries and Export Destinations", *American Economic Review, Papers and Proceedings*, 93, 150-154. Even if it is difficult to compare databases accurately, the figures derived from American data are about the same: around 20% of manufacturing businesses export (see A. Bernard, B. Jensen, S. Redding & P. Schott (2007), "Firms in International Trade", *Journal of Economic Perspectives* 21(3) : 105-130).

The happy few

Another significant fact arising from the study of fine grain statistics concerns the conditions for joining the club of exporting firms. Selection for it is strict. Exporting businesses are real stars: they are larger, better equipped and more productive. Table 1 takes the restricted sample of businesses with more than 20 employees and compares the group of exporting firms with that of strictly domestic businesses for 19 sectors of manufacturing industry. On average, the exporting firms in these sectors employ almost four times as many employees, the average wage in them is 14% higher and the capital intensity 77% greater. Above all, the total productivity of the exporting firms' factors is on average 20% higher.

These important differences between the exporters and the strictly domestic firms are not specific to France. Furthermore, it is important to note that the exporting firms' superiority displayed in table 1 is very likely to be under estimated due to the fact that we have only been able to study businesses with more than 20 employees here. For example, on the basis of an exhaustive sample, the Belgian and Norwegian data shows that the exporting businesses are not 4 times larger than the domestic firms but 6 to 9 times larger[5].

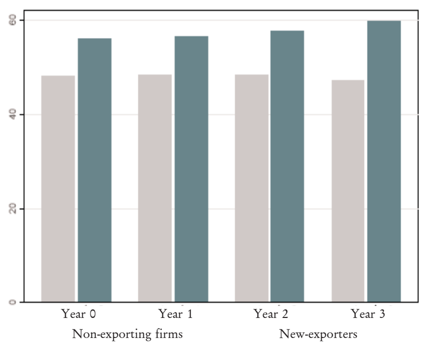
Table 1 – Ratios of the averages observed in the group of exporting and non-exporting firms (firms with more than 20 employees - 2003)

	Proportion that export (%)	Employment	Wages	Capital intensity	Productivity (estimated PGF)
Agribusiness	62	2.8	1.11	1.3	1.15
Textiles	81	1.9	1.22	1.3	1.35
Clothing	67	1.7	1.54	3.3	1.65
Leather goods and footwear	68	1.7	1.16	1.9	1.07
Word	54	2.0	1.11	1.6	2.27
Paper and board	80	3.1	1.09	1.6	1
Publishing and printing	54	1.5	1.1	1.2	1.08
Chemicals	90	2.5	1.05	1.2	0.73
Rubber and plastic	79	2.0	1.09	1.5	1.01
Non-metallic minerals	57	3.7	1.04	1.2	0.94
Metals	86	2.2	1.04	1.5	1.04
Machines and capital goods	78	2.5	1.06	1.6	1.04
Office machinery	83	21.6	1.22	2.0	1.63
Electrical machines	75	3.8	1.13	2.1	1.08
Radio-TV-Communication equipment	70	6.5	1.19	3.4	1.15
Precision instruments	75	3.1	1.14	2.2	1.08
Automotive	78	0.3	1.08	1.8	1.11
Other transport equipment	72	9.1	1.12	1.5	1.11
Furniture	76	2.6	1.11	1.1	1.18
Average	73	3.9	1.14	1.8	1.19

Interpretation: among the agribusiness companies with more than 20 employees, the exporting firms employ 2.8 times as many employees as the non-exporting companies; they offer wages that are 11% higher, have a 30% greater and a 15% higher productivity.
Source: French Customs and Excise statistics and Annual Business Survey (INSEE), CEPII calculations.

Two types of arguments can be advanced to explain this superiority of exporting firms. As the recent theories have suggested, the specific costs related to the internationalisation of firms lead to a selection of businesses on entry to the export markets. But the direction of causality can also be reversed: once firms manage to take up a position on the foreign markets, they can profit from their environment to invest and make further progress. Analysis of the individual data seems to show that these two mechanisms work in conjunction. Graph 3 compares the average value added per worker in non-exporting firms to that of businesses that start to export. We can see that in the year when the decision to export is taken, the firms that change status are effectively more productive than the others (selection effect). During the years that follow this decision, their advantage does not disappear; on the contrary, it tends to accentuate over the first three years. Very probably, this effect is partly due to the fact that businesses that start to export are a priori on a dynamic of sustained growth. Nevertheless, this observation suggests that experience on world markets tends to have a positive effect on the performances of businesses[6].

Graph 3 – Productivity of firms with more than 20 employees that enter the export markets



Source: French Customs and Excise statistics and Annual Business Survey (INSEE), CEPII calculations.

Making the star-system democratic

The fact that most businesses remain outside world markets should lead us to reconsider the effects of commercial opening. The traditional analysis of international trade, which concentrates on the sectors of activity rather than the firms themselves, considers that lowering trade barriers (signing regional agreements, reducing transport costs, *etc.*) has the effect of developing exports in proportions determined by the comparative advantages or the economies of scale. Once we take the diversity of firms into account, the impact of a commercial opening is more complex. The lowering of barriers can in effect increase exports, via an enlargement of the club of

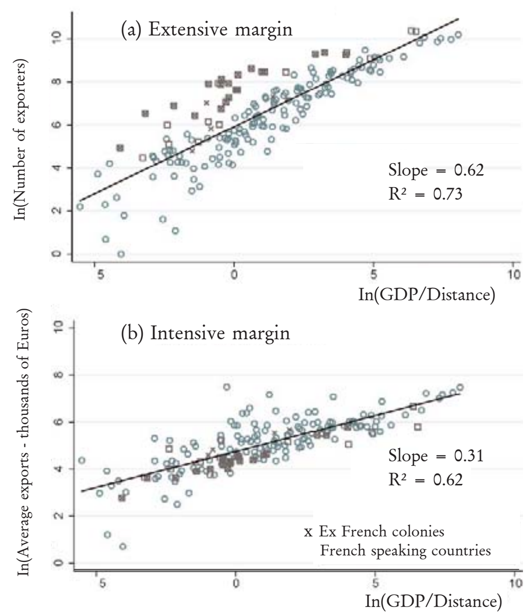
5. T. Mayer & G.I.P. Ottaviano (2007), *op. cit.*.
6 Without really rejecting it, the econometric analyses have difficulty in confirming the hypothesis of an apprenticeship effect in export markets. See A. Bernard & B. Jensen (1999), *op. cit.*, and Bellone *et al.* (2007), "The U-Shaped productivity dynamics of French exporters", *OFCE working document*, for a study of the French data.

exporting firms to new entrants or, on the contrary, by giving the "stars" already present on the world markets the opportunity to further increase their sales abroad. Thus, the aggregate bilateral trade flows can be broken down into two parts: the number of exporters which represents the effect of democratization (known as the extensive margin of international trade) and the average value exported which measures the effect of reinforcement of the firms in place (this is the intensive margin).

Graph 4 explores these two margins on the basis of the complete population of French exporters in 2003. Each of the parts of the graph represents one of the two margins (in logarithms) according to a measure of the export market's degree of accessibility, inspired by models of gravity: the importing country's GDP in relation to the geographic distance separating the country from France. Part (a) looks at the effect of the accessibility on the number of exporters to each country in the world. Part (b) looks at the effect of the accessibility on the average sum sold by those same exporters. This simple breakdown of bilateral exports reveals two important facts: (1) the number of exporters and the average value sold both increase with the size of the partner country and decrease with the distance, (2) an increase in the accessibility of the market has about twice as great an effect on the extensive margin as on the intensive margin. The straight regression lines plotted on graph 4 show that in a foreign market twice as near as another (or twice as large), we would see 62% more exporters, whilst the average sales of each firm would be 30% greater.

In short, a democratization mechanism is above all responsible for the development of export capacities: it is more the doing of new entrants than the growth of firms in place. Thus, the exploitation of individual data on international trade enables us to take a new look at globalization and its consequences. It also enables us to sketch the outlines of an agenda for public policy. If the increase in the number of exporters is mainly responsible for the growth of exports, then the efforts to support competitiveness should be concentrated on medium size businesses, the potential or very small exporters. This is even more important if the businesses that start to export subsequently see their productivity and level of employment effectively increase. Final, a simple analysis of international trade margins shows that small barriers to trade can have important effects on the country's export capacities by dissuading a large number of firms from making their entry onto world markets. These barriers are by nature very diverse and may be related, for example, to the lack of harmonisation between the standards imposed by each country, the inadequacies in legal and administrative systems or the costs of setting up logistics chains. In fact, above and beyond the international negotiations aimed at limiting protectionist policies, the area of activity of public policies for promoting exports is still vast and includes a certain number of purely national or even local measures. This work is all the more important for France in that recent statistics show that the number of exporting businesses has tended to decrease in the last few years: from more than 113,500 in 2003, it fell below the 112,000 barrier in 2004, then to less than 111,000 in 2005.

Graph 4 – Extensive and intensive margins of international trade, 2003



Interpretation: French exporters are 6.2% more numerous and the average value of their sales is 3.1% greater in an export market that is 10% larger or 10% closer to France.
Sources: French Customs and Excise statistics - CEPII calculations.

Matthieu Crozet & Thierry Mayer
laure.boivin@cepii.fr

LA LETTRE DU CEPII

© CEPII, PARIS, 2007
EDITORIAL OFFICES

Centre d'études prospectives
et d'informations internationales,
9, rue Georges-Pitard
75015 Paris.
Tél. : 33 (0)1 53 68 55 14
Fax : 33 (0)1 53 68 55 03

PUBLISHER:
Agnès Bénassy-Quéré
Director of the CEPII

CHIEF EDITOR:
Agnès Chevallier

DTP:
Laure Boivin

DISTRIBUTION:
La Documentation française.

SUBSCRIPTION only to the original, French version.
(11 issues per year)
France 48.50 € VAT
Europe 50.10 € VAT
DOM-TOM (NET, econ. air mail)
49,10 € NET
Other countries (NET, econ. air mail)
50.10 € NET
Please send your orders to:
La Documentation française,
124, rue Henri Barbusse
93308 Aubervilliers Cedex
Tél. : 33 (0)1 40.15.70.00

WEB site: **www.cepii.fr**
ISSN 0243-1947

CCP n° 1462 AD
4th Quarter 2007
October 2007
Imp. ROBERT-PARIS
Imprimé en France

The CEPII is entirely responsible for the Lettre du CEPII *and its on-line, English translation. The opinions expressed therein are those of the the authors.*