7.3. How important is the role of entry and exit in international markets?

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1. Motivation

Economies present strong firm dynamics when analyzed at the micro level. Such dynamics also translates into entry and exit of firms in the international markets, expansion or contraction of export and import scopes, as well as in terms of the portfolio of markets supplied and sourced. Beyond adding or dropping of firms, markets and goods - the designated extensive margin - the change in the scale of operations by continuing firms in continuing markets with continuing goods - the designated intensive margin - is very relevant. Nevertheless, new-born firms, upon survival in their first year, become continuing firms and they may be quite different from older ones. Therefore, following the individual cohorts of international traders is another way of studying the dynamics of trade and, ultimately, Portuguese economic growth. This Section bases on Amador and Opromolla (2017) and assesses the contribution of the intensive and extensive margins in the firm, destination and product dimensions both in exports and imports of goods in the period 1995-2014. Moreover, we describe the behaviour of cohorts of international traders born in the last 20 years, with an emphasis on the impact of events like the great trade collapse and the Portuguse economic and financial assistance program. The literature on the margins of international trade is too large to be listed here. The seminal contributions are those of Eaton *et al.* (2004), Schott (2004) and Bernard *et al.* (2007). As for the analysis of cohorts of international traders, there is little literature because it requires databases that track traders along a relatively large sequence of years. One exception is Wagner (2012), which studies the cohorts of exporters in Germany that started to export between 1998 and 2002.

2. The analytical framework

The analysis of product and destination mix is made possible by the use of a database that includes all export and import transactions by

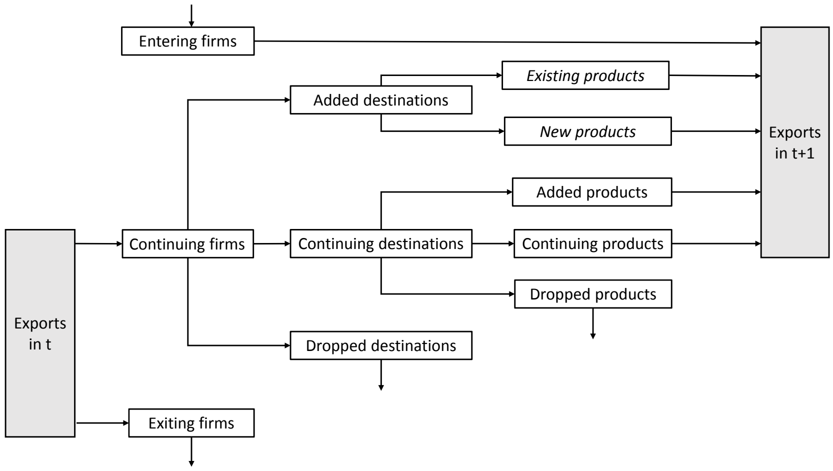


Figure 57: The margins of trade

firms that are located in Portugal, on a monthly basis, from 1995 to 2015, aggregating to total Portuguese exports and imports of goods, as reported by the Statistics Portugal (Instituto Nacional de Estatística). We take account of the existence of reporting thresholds for exports and imports. In order to have a comparable set of firms and to avoid attributing entrance and exit of traders to changes in the reporting threshold, we take the highest report limit in the entire period and apply it to all years, after adjusting for inflation with the consumer price index. We define products at four-digit level according to the HS. This allows us to avoid classification problems related to revisions of the Combined Nomenclature and still allows for a set of more than 1000 potential products.

Portuguese total export and import growth rates are broken down into the contribution of three distinct decisions: the decision to entry/stay/exit in export/import markets, the decision of where to export/import and the decision of what to export/import. Consistently with what was done in Amador and Opromolla (2013), we first decompose total export growth in the contribution of "entering", "exiting" and "continuing" traders, that is, in the extensive and intensive margin at the aggregate level along the firm dimension. Next, we consider the product that firms choose to export in "continuing" and "added" destinations. We distinguish among "added", "dropped" and "continuing" products exported by firms in "continuing destinations", that is, the extensive and intensive margin at the firm level along the product dimension. Finally, we split the export change associated to new destinations into products already sold by the firm somewhere, i.e. old products, and products that were not sold by the firm anywhere, i.e. new products. The diagram in Figure 57 summarizes the decomposition.

3. Results

3.1. *Trade margins*

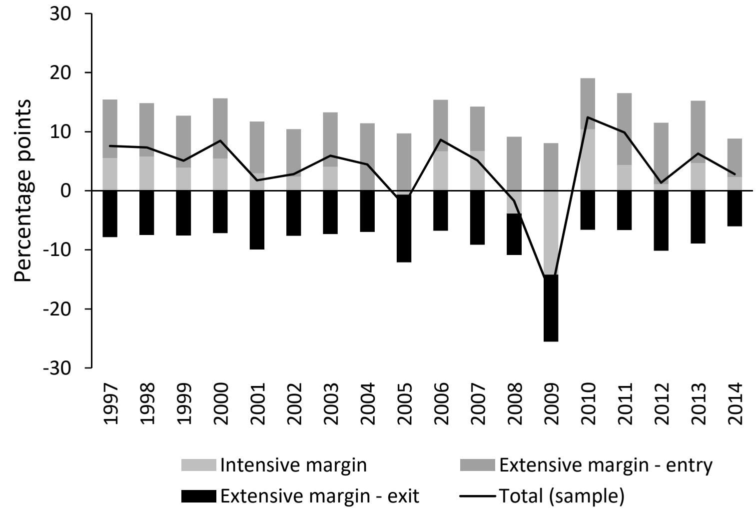
The panels of Figure 58 plot the contribution of intensive and extensive margins to the yearly export and import growth rates over the period 1996-2014. The intensive margin includes the growth of exports (imports) of continuing products in continuing destinations (origins) by continuing firms. The sum of the bars corresponding to the entry and exit parts of the extensive margin define the growth of exports (imports) due to net firm, product and destination (origin) entry. The most important insight is that the intensive margin is the main driver of the growth rates in both trade flows. The contributions from gross entry and exit of firms, destinations and products are large but their net effect is small at the yearly level.

The panels of Figure 59 plot the contribution of the intensive and extensive margins to the accumulated export and import growth over the period 1996-2014. As for the export side, it is clear that, after 18 years, the overall intensive margin represents a sizeable share of cumulative export growth. Nominal exports of goods increased by 89 per cent in the period 1996-2014, while the cumulative extensive and intensive margins increased by 23 and 55 per cent, respectively. A somewhat similar picture is visible for imports of goods. Nominal imports of goods grew by 80 per cent in the referred period, while the overall extensive and intensive margins grew by 27 and 45 per cent, respectively. Therefore, although the extensive margin is relatively small on an yearly basis, it is important in cumulative terms.

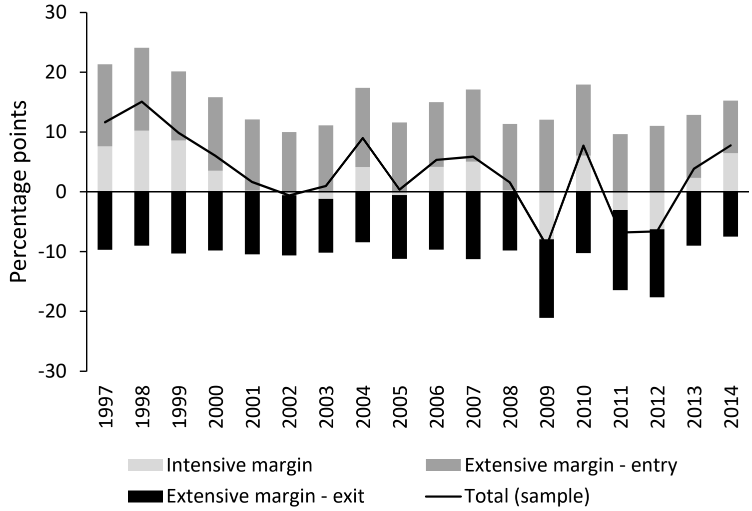
Panel a of Figure 59 shows a very strong impact of the great trade collapse in the intensive margin but not in the extensive margin. This is compatible with the well-established fact that exports to foreign markets involve important entry and re-entry costs. For example, firms must allocate resources to adapt to local legislation, establish retail channels and sometimes adjust to local preferences.

A similar analysis conducted for the import side leads to somewhat different results. The total effect of the great trade collapse is smaller than in exports. Conversely, the negative impact on imports of the sovereign debt crisis in the euro area and of the Portuguese economic and financial assistance program in 2010-2012 is visible in the extensive and, mostly, in intensive margins.

It should be mentioned that the conclusions based on the cumulative impact of the extensive margins convey a conservative message in terms of its role to trade flows. By definition, a new trader, a new



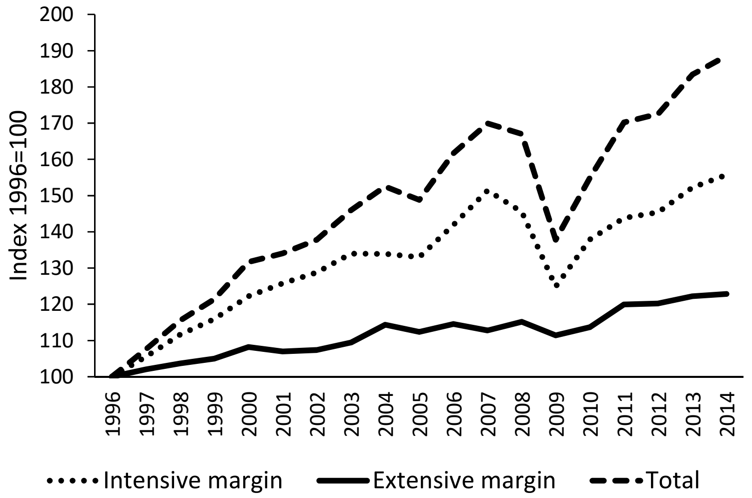
(a) Exports



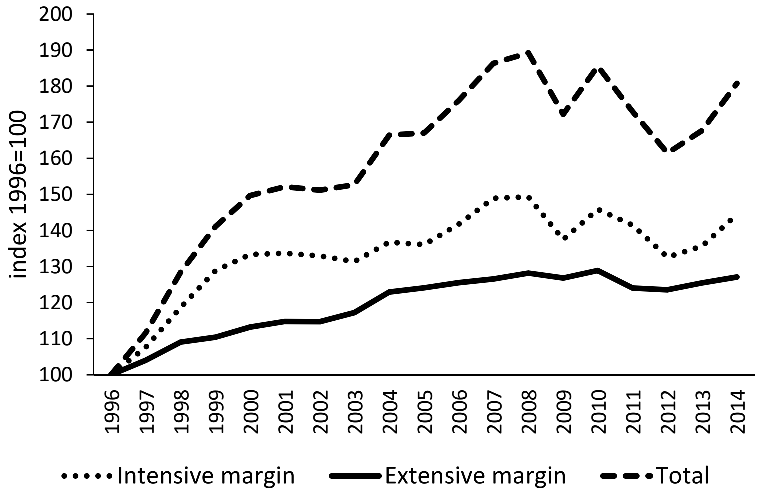
(b) Imports

Figure 58: Yearly intensive and extensive margins

destination (origin) or a new product by continuing traders are only accounted for in the extensive margin in the initial period. After the initial period they become part of the intensive margin. Therefore, the decisions of international traders with different ages feed the intensive margin exactly in the same way. To better understand the differential contribution of old and new international traders to export and import developments, cohorts need to be followed separately.



(a) Exports



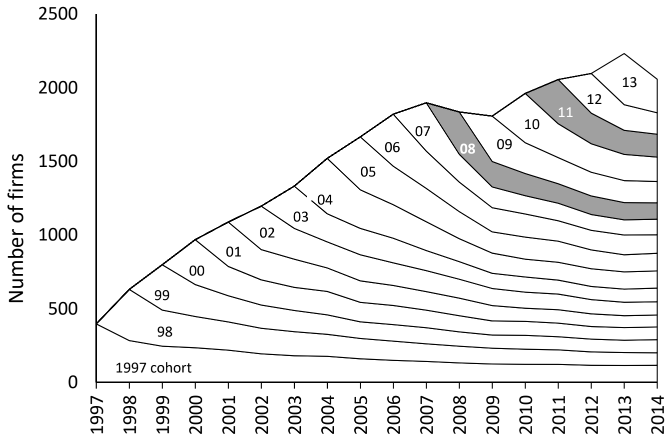
(b) Imports

Figure 59: Cumulative intensive and extensive margins

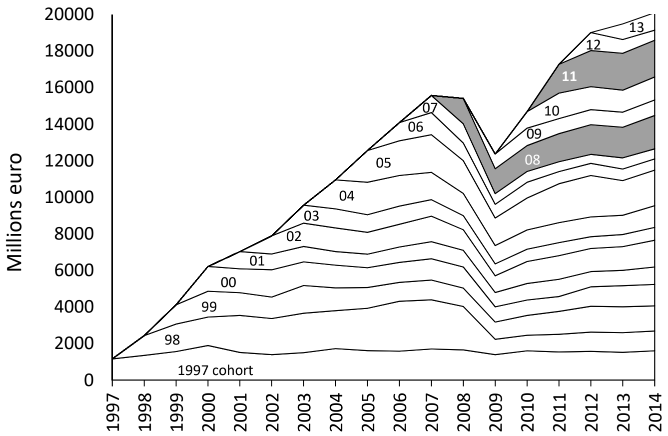
3.2. *Cohorts of exporters and importers*

An important part of the analysis of the growth rate of exports and imports is the contribution of the cohorts of traders. It is interesting to assess the pattern for their survival and growth and it is relevant to evaluate whether events like the great trade collapse or the Portuguese economic and financial assistance programme have lasting effects on the cohorts of traders that entered on those years.

The exit rate of new exporters is particularly high in the first year of life, as almost one out of three exits foreign markets. This exit rate drops to about 15 per cent in the second year and slowly decreases afterwords. In our sample, three fourths of new exporters exit in the



(a) Number of exporters

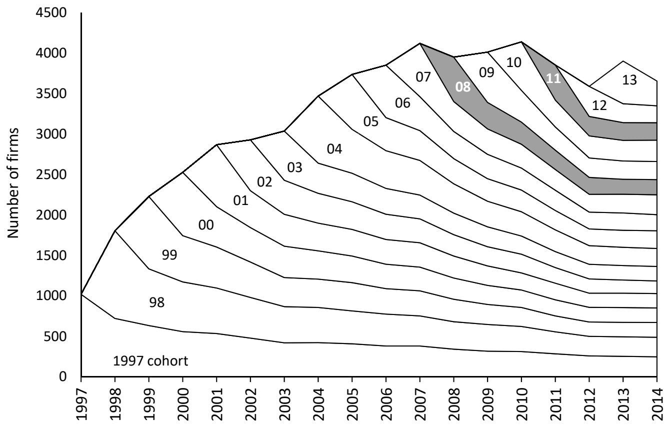


(b) Value of exports

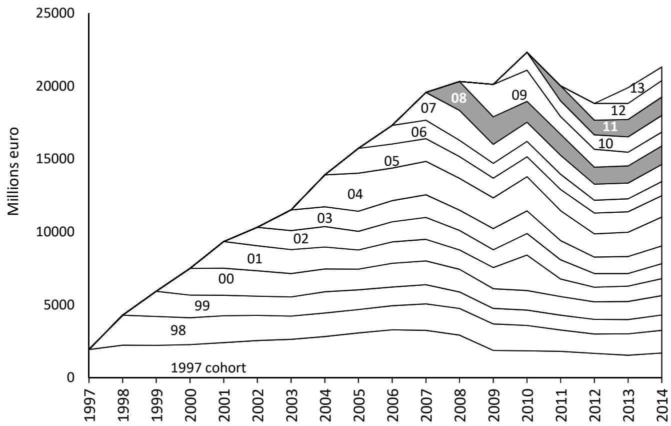
Figure 60: Number of exporters and value of goods exports per cohort in each year

first five years of activity. The ratio of exports per firm increases on average about 70 per cent in the first year of the cohort, meaning that those that survive strongly increase exports. This growth rate decreases to an average of 10 per cent in the second year, stabilizing afterwards on a range between 4 and 9 per cent.

The yearly number of firms and the value of their exports for each cohort is difficult to represent in a meaningful way. The panels of Figure 60 suggest a representation that plots cohorts as stacked layers. Therefore, on an horizontal perspective, the thickness of each layer defines the evolution in the cohort's number of firms (panel a) and their exports (panel b), while a vertical reading gives the breakdown of the total number of exporters starting activity after 1997 and their exports by cohort.



(a) Number of importers



(b) Value of imports

Figure 61: Number of importers and value of goods imports per cohort in each year

Panel A of Figure 60 shows that the size of each cohort in terms of number of firms virtually stabilizes after around eight years. The cohorts born in 2008 and 2011, which correspond to the beginning of the great trade collapse and the first year of the Portuguese economic and financial assistance program, follow a normal pattern in terms of number of exporters and a comparatively good performance in terms of total exports, especially the 2011 cohort. This suggests that firms that start to export in crisis years, and manage to survive, are not handicapped. In the Portuguese case, the 2008 and 2011 crisis took place against a background of strong export growth that had been initiated several years before. Indeed, Portuguese firms were adjusting for some time to a new pattern of comparative advantages, which followed the shocks of Asian competition and EU enlargement.

As for the cohorts of importers of goods in the Portuguese economy (Figure 61), we observe that the initial number of firms in each cohort has been decreasing, notably after 2008, but those that survive seem to increase in number. In 2014, the share of importers born in post-1996 cohorts is relatively close, despite the difference in terms of age. Nevertheless, the value of imports per cohort evolves in somewhat different ways. For example, the post-2008 and, mostly, post-2010 cohorts show lower import levels.

4. Final remarks

Portugal presents a healthy demography of international traders with high gross entry and exit rates and a significant role for the extensive margin in accumulated terms. Indeed, churning is an important feature in markets in order to select the best ideas and the most efficient firms. Nevertheless, despite high mortality rates in the first year of life, the cohorts of exporters in the last two decades have shown a steady path. Therefore, the temptation of blindly supporting newborn firms should be avoided, because it is expensive and does not necessarily improve the overal export performance.

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