

# Openness to Trade and Industry Productivity Dispersion

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According to the Lisbon agenda, the strategic objective for Europe is to become **the most competitive knowledge-based economy in the world**. While improving Europe's competitiveness is a complex and somewhat elusive objective, improving the competitiveness of Europe's firms represents a narrower, more concrete, still clearly fundamental target. More competitive firms are more productive. They offer better products at a lower price to domestic customers. They also offer better deals to foreign customers and this enhances the ability of Europe to import scarce commodities from elsewhere. More productive firms are also more profitable and, thus, create more value for their shareholders.

Since the very beginning of European integration, the role of openness in promoting firm productivity has been recognised by European leaders. Indeed, an important premise behind the Single Market Program was the belief that, by allowing access to a bigger market, the integration of European economies would make European firms more efficient. In turn, this would allow them to lower prices, raise quality and gain competitiveness in external markets.

Lately we are beginning to get real data – and enough computing power on our PCs – to test these beliefs. Ideally, one would need individual information of the performance of firms collected through surveys and balance sheets in a homogeneous way across European countries. Unfortunately, there is currently no harmonised dataset at the European level covering all the key dimensions one would like to explore, such as productivity, internationalisation strategies and ownership structures. With a growing recognition that only a coordinated effort at the European level will eventually fill the gap, under the coordination of **Bruegel** and **CEPR**, eight research centers from eight European countries have agreed to create a network working on firm-level trade and FDI data. The network is called EFIM after its central research theme: **'European firms and international markets'**.

While EFIM promises to deliver a pan-European perspective on the interactions between openness and competitiveness, existing analyses necessarily focus on

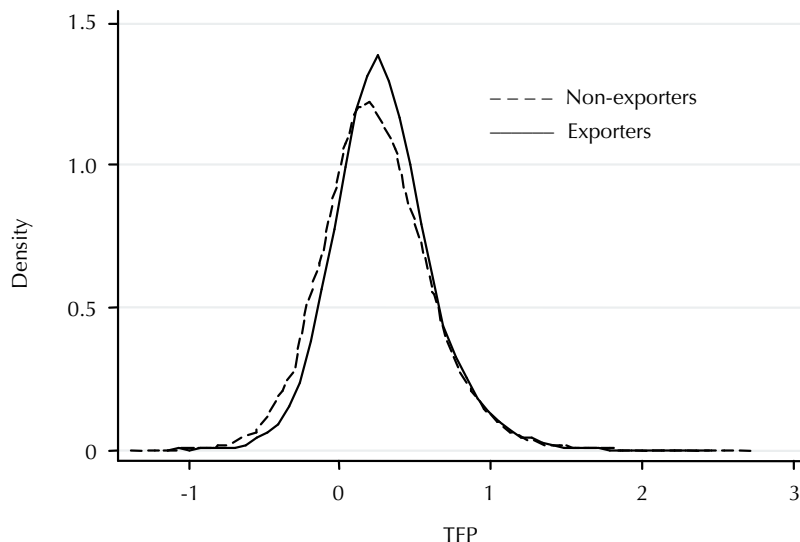
individual countries. This Policy Insight targets Italy and highlights the new evidence on the impact of international openness on the productivity of its firms (see **CEPR DP 6336**). More openness forces less efficient firms to shut down. This increases the average productivity of industries. It also reduces the gap between the best and the worst performers with relevant implications for the political economy of further integration.

## **The political economy of trade policy: the traditional view**

In the age of globalisation it is popular to describe international competition as a world championship among national teams. Just like in the Olympic Games, where nations compete with different teams across the various disciplines, in the global markets countries challenge one another across different industries.

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The concepts of 'comparative advantage' and 'comparative disadvantage' are used to identify industries in which a country is stronger than its competitors and those in which it is weaker, meaning industries in which its relative costs of production are respectively low and high. In the global arena industries of comparative advantage are expected to expand while those of comparative disadvantage are expected to shrink. As a result, the owners of assets and skills specific to thriving sectors 'win', while those committed to withering sectors 'lose'. As all special interests within sectors are expect-

**Figure 1** Productivity and export status

Source: Del Gatto M., G. Ottaviano and M. Pagnini (2005) 'La competitività delle imprese italiane: all'origine del malessere', *Economia Italiana*, N.1 Gennaio-Aprile, pp. 75-94.

ed to face the same destiny, they naturally get organised in pressure groups whose divides run along sectoral borders. This is, more or less, the political economy of trade policy as we know it.

#### Intra-industry reallocations<sup>1</sup>

In recent years, this 'sectoral view' has been increasingly challenged by the analysis of large firm-level datasets that have unveiled a large heterogeneity in the competitiveness of firms within the very same industry. In this respect, a hallmark result goes under the label of 'exceptional export performance' and refers to the fact that exporters are systematically found to be on average more productive than non-exporters. The performance premium is even larger for multinational firms. Figure 1 reports the distribution ('density') of Italian manufacturing firms across total factor productivity ('TFP') levels. The distinction between exporters and non-exporters reveals that the former are on average more productive than the latter.

In principle causality could run both ways: only more productive firms become exporters ('selection into export status') and exporting improves firm efficiency ('learning by exporting'). The current consensus favours the former direction of causality. In particular, two stylised facts are often stressed. First, exposure to trade forces the least productive firms to exit the market or to shut down. Second, trade liberalisation leads to market share reallocations towards more productive firms. Thus, there seems to be some robust evidence (see [Bernard and Jensen, 1999](#)) that the opening of distant markets gives an additional opportunity only to the most productive firms within each industry, allowing them to enlarge their market shares to the detriment of less productive competitors, the least efficient of which are forced to exit.

<sup>1</sup> These results are based on Del Gatto M., G. Ottaviano and M. Pagnini (2007) "Openness to trade and industry cost dispersion: Evidence from a panel of Italian firms", *CEPR DP No. 6336*.

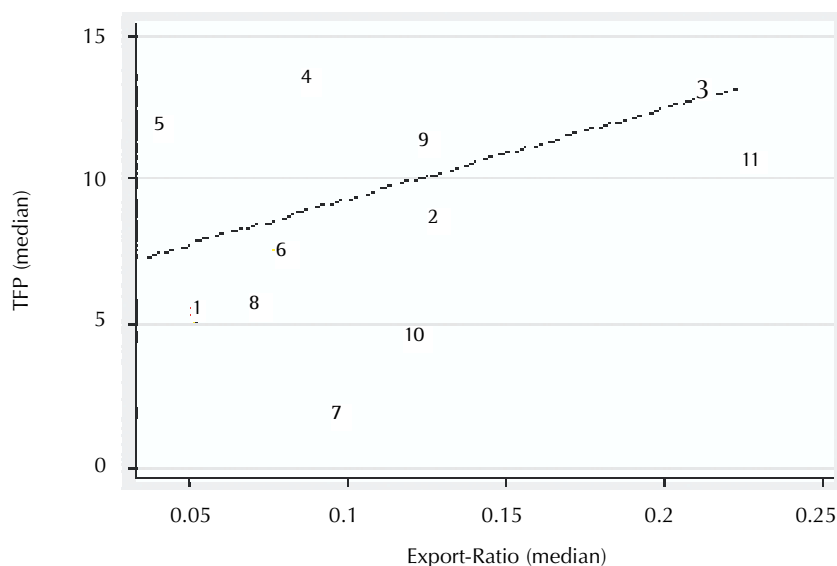
These facts have been recently explained by theoretical models (see [Behrens, Mion and Ottaviano, 2007](#)) that differ in terms of the feature that leads only the most productive firms to engage in distant trade. Some models stress the role of limited product differentiation resulting in tougher worldwide price competition when markets become more open. Others highlight, instead, the role played by the sunk costs of export and foreign investment that only more productive firms can afford. This selection effect is reinforced by falling markups due to increasing openness to global competition, while its strength varies across countries depending on their sectoral specialisation and their geographical position in the trade network.

**Recent advances have challenged the sectoral view as the analyses of large firm-level datasets have revealed large heterogeneity in the competitiveness of firms within the very same industry ... a hallmark result is that exporters are systematically more productive, with the performance premium being especially large for multinationals.**

Figure 2 depicts the relation between median productivity ('TFP') and median export propensity across Italian manufacturing industries. The export propensity of an industry is measured by its 'export ratio', that is, the average ratio of firm export to turnover. The relation is positive: openness and productivity go hand-in-hand.

The mechanism driving the selection effect is a combination of import competition and export market access. On the one hand, as lower trade costs allow foreign producers to target the domestic markets, the operating profits of domestic firms in those markets

Figure 2 Productivity and export propensity



Source: Del Gatto M., G. Ottaviano and M. Pagnini (2005) 'La competitività delle imprese italiane: all'origine del malessere', *Economia Italiana*, N.1 Gennaio-Aprile, pp. 75-94.

shrink whatever their productivities. On the other hand, some domestic firms gain access to foreign markets and get additional profits from their foreign ventures. These are the firms that are productive enough to cope with the additional costs of foreign activity (such as those due to transportation and remaining administrative duties or institutional and cultural barriers).

### Trade-linked elimination of inefficient firms should compress the observed dispersion of firm-level productivity.

The data on Italian manufacturing industries confirms this.

A 2 standard-deviation increase in openness to trade is associated with a 0.9% decrease in dispersion.

The result is the partition of the initially active domestic firms into three groups. As they start making losses in their home markets without gaining access to foreign markets, the least productive firms are forced to exit. On the contrary, as they are able to compensate lost profits on home sales with new profits on foreign sales, the most productive firms survive and expand their market shares. Finally, firms with intermediate levels of productivity also survive but, not being productive enough to access foreign markets, are relegated to home sales only and their market shares fall. Since international trade integration eliminates the least productive firms, average productivity grows through the reallocation of productive resources from less to more efficient producers.

The punch-line is that trade liberalisation induces a reallocation of resources from less to more productive firms.

#### Shut downs and price compression

The selection due to international competition deter-

mines the impact of trade openness on the distribution of firms across productivity levels. In particular, much attention has been devoted to the mean value of such distribution. For example, an increase in average industry productivity is generally observed as the market becomes more open to distant sellers and less productive firms are forced to shut down. This leads to lower average prices and mark-ups but larger profits for the surviving firms as they are able to expand their scale of operation.

Selection has also implications in terms of the dispersion (or spread) of the productivity distribution. Indeed, the exit of the least productive firms naturally leads to a reduction in the industry's productivity ranges, defined as the gaps between the best and the worst performing firms (or plants) in the industry. This causes the compression of price, mark-up and profit ranges as the performance gaps among surviving firms shrink. However, while the evidence on the average reaction of productivity to trade shocks is a robust empirical finding, much less is known about its dispersion. State-of-the-art analysis currently suggests that increasing trade openness is indeed associated with falling productivity ranges. Moreover, smaller ranges characterise larger and more accessible markets or sectors that are more open to distant trade and deal in less differentiated products. Across Italian manufacturing industries, a two-standard-deviation increase in openness to trade is associated with a 0.9% decrease in dispersion, which is equivalent to a 76% decline when evaluated in terms of openness standard deviation.

#### The political economy of trade policy revised

The impact of international competition on firm exit and price dispersion within sectors has important implications for the political economy of trade liberalisation. When firm heterogeneity is neglected, within an industry all firms lose equally from trade liberalisation to the advantage of consumers. They therefore have the same incentive to participate to protectionist lobbying. When

firms face, instead, very different destinies within the very same sector, the incentive to lobby varies across firms with different market performance. This translates into political economy outcomes that depend on the dispersion of such performance. Accordingly, the extent of firm heterogeneity within an industry affects the clout of protectionist stances and their translation into effective pressure on policy-makers. For example,

accounting for firm size dispersion and associated differences in lobby participation shares explains a non-negligible fraction of the variation of protection across US sectors (Bombardini, 2005). Whether trade openness increases or decreases the differences between firms then becomes crucial for the political sustainability of the ongoing process of global trade liberalisation.

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