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Food exporters in global value chains: Evidence from Italy

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ABSTRACT

This paper offers a firm level perspective of global value chain participation in the food industry. We single out some stylized facts on food global value chains and the Italian food industry. Exploiting a very rich and original dataset, based on a 2011 survey of 25,090 Italian firms operating in manufacturing and related services, we characterize the food industry, describing its main strengths and weaknesses, and analyze the links between the probability to export and the value chain participation. Our results show that participating in a value chain significantly increases the probability to export. This is particularly true for small firms in the industrial food value chain and for firms positioned downstream. Participating in distribution chains, for instance being able to sell products through large supermarkets, also significantly contributes to internationalization. These results can have important implications in terms of trade policy: tariffs and other protection measures are cumulative when intermediate inputs are traded across borders multiple times. Hence, protection can end up in a significantly higher cost of finished goods. When discussing trade policy therefore, it is crucial to "think value chain".

Introduction

In the last two decades, technology advancements and reductions in transportation and communication costs have changed the way goods and services are produced, by triggering a higher division of labor both within and between firms and countries. This makes Global Value Chains (GVC) the key to understand recent transformations in the global economy and patterns of trade.

The existing literature developed around two main strands. One is the so-called "Global Value Chain Approach," an analytical framework able to shift the focus from a merely technical perspective, i.e. production only activities, to a broader governance perspective, including a wide range of market and non-market activities related to the provision of the final good (Gereffi, 1994; Gereffi et al., 2001).

The second strand takes a different, more quantitative and theoretical perspective and is rooted in recent advancements in trade theory, highlighting imperfect competition and firms heterogeneity (Melitz, 2003; Bernard et al., 2007, 2011; Melitz and Redding, 2013).

Our aim is to explain the characteristics of international trade which show in the data, bridging the gap with existing trade theories, and accounting for the possibility of incomplete contracts, likely to affect firms' decision on whether and how to outsource or vertically integrate, and, one could say, enter the GVC (Grossman and Rossi-Hansberg, 2008; Grossman and Helpman, 2002; Grossman and Hart, 1986; Antràs, 2003). Under different contracts and conditions, firms are likely to choose different internationalization strategies and play different roles within the GVC (Castellani et al., 2010; Baldwin and Lopez-Gonzalez, 2013; Giovannetti et al., 2015). For instance, unreliability of suppliers or courts in a country may change the comparative advantage of a country along the value chain.

The lack of a unified framework of analysis can be partially traced back to data unavailability. Global Value Chains challenge the way statistics on trade and output are collected as well as the models. As pointed out by de Backer and Miroudot (2014) "there is a growing awareness that current statistics can give the wrong picture... Trade statistics... record several times the value of intermediate inputs traded along the value chain. As a consequence, the country of the final producer appears as capturing most of the value of goods and services traded, while the role of countries providing inputs upstream is overlooked. Bilateral trade statistics and output measures at the national level make it difficult to visualise the "chain" or the production network" (p. 8). A first attempt at filling this gap comes from the OECD and the WTO, which have built a new database of trade flows in value-added terms based on a global model of international production and trade networks. A second attempt to bring more disaggregate

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analysis to the table comes from studies employing firm level data to understand the role of GVC.

Giovannetti et al. (2015) for instance explicitly include a direct measure of value chain participation into a firm level analysis, assessing the relation between firms' internationalization and their participation in value chains and finding that being in a value chain significantly helps small Italian manufacturing firms to export and to increase their export intensity, especially when they operate in downstream activities.

Several studies from the above mentioned "GVC Approach" highlight that GVC may take several configurations and have different governance structures in different industries (Gereffi, 1994). However, the concept of sector itself may become problematic in a context where value chains are pervasive. Firms operating in different but connected sectors of the economy, as well as in different positions along the value chain, are likely to entertain very diverse types of relations with each other and hold varied degrees of decisional power (Gereffi et al., 2005). Hence, more detailed information can be extracted by investigating the structural relation between value chain participation and internationalization focusing on a specific sector.[1]

In what follows, we analyze food processing firms. Our aim is twofold: on the one hand, we want to investigate whether and how food processing firms differ; on the other hand, we want to assess the specific relation between value chain participation and internationalization of food processing firms, a sector which is highly international along all the phases of the chain (see de Backer and Miroudot, 2014).

We contribute to the existing literature in three ways. First, we give new insights about the role of global value chains adding to the scant evidence available at the firm level. Second, we highlight that heterogeneity between and within sectors, and different types of value chains have important implications, making the available evidence, usually based on aggregate sectoral level input–output tables or case studies, sometimes misleading. Third, our results suggest a need for policies specifically accounting for Global Value Chains, and suggests that food firms may greatly benefit in terms of export from policies aimed at facilitating their participation in value chains.

The empirical analysis exploits an original dataset based on a firm-level survey on over twenty-five thousands Italian firms, mostly small and medium-sized firms, providing data on firms' internationalization strategy, networks and, notably for our research question, a direct information about participation of firms in value chains.[2] It focuses on the Italian food processing sector, interesting for a number of reasons.

First, the specialized literature has highlighted a number of peculiarities of firms in the food industry, showing that an aggregate analysis, as the one typically conducted by means of input–output tables, may hide important characteristics and heterogeneities. Analyzing the specific value chain of food products leads to a more consistent evaluation of the relation between value chain and internationalization, especially since the configurations of the value chain may be very different in other sectors. Second, despite some strong productions, the Italian food industry seems to lag behind with respect to that of other EU countries such as France or Germany. In particular, Italian food-processing firms, especially the smaller ones, operating into a despecialization sector where many products display a high level of global integration, may be particularly exposed to foreign competition. Analyzing the strategies of successful firms in such a sector may yield important policy implications.

The remainder of the paper is organized as follows. Section 'Stylized facts' presents four stylized facts characterizing the Italian food processing sector. Section 'Data and descriptive statistics' describes the data and descriptive statistics, while econometric results are in Section 'Empirical analysis'. Section 'Conclusion' concludes, drawing some policy implications.

Stylized facts

The agri-food industry is increasingly global and organized in international production networks. A number of studies (Fally, 2012; de Backer and Miroudot, 2014) shows that the food value chain is rather peculiar as it tends to be "buyer-driven", relatively long in production and with long retailing chains. Recent evidence suggests that, over time, power has shifted toward downstream firms in the production process, and even more strongly toward downstream firms in the distribution process, such as large-scale retail distributors, e.g. supermarkets (Lee et al., 2012). The current structure of the food GVC is mainly the result of last decade restructuring process that induced an increased level of market concentration (Humphrey and Memedovic, 2006; Burch and Lawrence, 2005). Nonetheless, a large fraction of the value continues to be added at the food processing stage, especially for own-branded downstream firms. For instance, margins (EBIT) are between 10% and 20% for food companies, but much lower for pure retailers (KPMG, 2013).

The agri-food value chain can be schematically represented as in Fig. 1. Its main features include a wide variety of activities from inputs suppliers, such as seeds, machinery and chemicals, to farming, processing, distribution and other food-related services (also financial inputs, not included in the diagram for simplicity, play an important role). Analyzing the specific governance structure of the entire value chain of a given product is thus a very complicated task and it is likely to be more accurately pursued with specific case studies, as is in fact the case of many of the above mentioned and related studies.

In what follows, we confine the analysis to Italian manufacturers of food products, that is on firms labeled as upstream and downstream food processors in Fig. 1, and we single out some stylized facts. This choice is consistent with our research question and our dataset.

> *Stylized Fact 1*: Italy is one of the world largest exporters of food products, despite having trade deficit in food (not being specialized). At the product level there is a relatively high degree of heterogeneity, with some high specialization products.

Italy represents an interesting case for the food industry for a number of reasons. It is the 8th food (and beverages) exporter at the world level and the 5th at the European level. The other largest exporters being Germany, the Netherlands, France and Belgium.[3]

The number of firms in the food products manufacturing sector is about 55 thousands, employing some 395 thousands workers. The average margins (EBITDA) are about 33% of the value added,

[1] In previous work, we account for this possible source of heterogeneity by introducing sector level fixed effects and several other controls. Our results are robust. However, since our research interest is on the agri-food sector, a greater level of detail may be appropriate. To better analyze the peculiarities of a given sector, it may be useful to focus on the sector specific relation between value chain participation and internationalization.

[2] In particular, we exploit the answers to an explicit question in the survey about participation of firms in value chains. Related works had to rely on an indirect measure, such as the status of subcontractor or supplier of intermediate goods as a proxy for participation in value chains (see for instance Accetturo et al., 2011; Agostino et al., 2011; Wynarczyk and Watson, 2005).

[3] Note that the Netherlands and Belgium are rather peculiar, being relatively small countries characterized by the presence of some important multinationals. France and Germany provide more appropriate references for Italy.