Carbone *Agricultural and Food Economics* (2017) 5:3
DOI 10.1186/s40100-017-0071-3

Agricultural and Food Economics

RESEARCH Open Access

Food supply chains: coordination governance and other shaping forces

Anna Carbone

Correspondence: acarbone@unitus.it
Dibaf, Università della Tuscia, via san Camillo de Lellis snc, 01100 Viterbo, Italy

Abstract

The aim of this paper is twofold. First, it discusses how the functioning and performance of food chains are affected by the way stakeholders are embedded in the chains, by the coordination modes, and by the kind of governance. Second, by depicting six relevant agro-food chains, attention is raised on the kind of the stakeholders that participate in the chain and on the role of each with a special focus on possible drawbacks of an effective functioning of the supply chains. The chains outlined are (i) supply chains driven by a large retailer; (ii) supply chains driven by a global processing company; (iii) supply chains driven by a cooperative; (iv) supply chains for geographical indications; (v) short supply chains; and (vi) supply chains driven by a specialized high quality retailer.

Special consideration is given to the positioning of farmers in each of the six chains and to the outcomes they get. It is shown how: (i) going spot on the marketplace may leave them with difficult market access and no bargaining power; (ii) being embedded in supply chains framed in the context of a captive governance may result in a squeeze of their profits as well as in unreliable market access; and (iii) supply chains are populated by reciprocal and pooled relationships and ruled by a more relational kind of governance, beside potentially bringing advantages in terms of decision power and economic benefits, also raises difficulties and drawbacks due to complexity of functioning, heterogeneity of stakeholders, and ambiguity of the nature of relations among them.

Keywords: Hybrid institutions, Collective actions, Food, Coordination, Governance

Jel classification: L14, L15, Q13

Background

Supply chains are complex entities usually populated by many firms and diverse economic agents each contributing to deliver the final good to the consumer. They belong to the broad category of the so called *hybrid institutions* where the term hybrid refers to complex organizational forms which many stakeholders performing jointly tasks that neither the market nor the individual firm can achieve. The extremely wide and heterogeneous literature on the topic confirms that economists increasingly acknowledge the efficacy of the concept in analyzing the organization of supply and are challenged by the complexity of these institutions when trying to better understand their role in the organization of different aspects of the economic life (Hobbs 1996; Menard 2004; Oliver 1990; Oliver and Ebers 1998).

Since the contributions by Davis and Goldberg and by Malassis (Davis and Goldberg 1958; Goldberg 1968; Malassis 1969), it is widely recognized that in industrial economies the production of food is organized in complex systems where diverse specialized firms interact intensively and progressively modify raw materials, adding intermediate input-ingredient services and anything that increase value to the final consumer. In the last decades, the complexity of the system increased further so that it has been often referred to as the industrialization of agriculture (Fonte and Cucco 2015; Traill 1996). There is general consensus—both among researchers and practitioners—on the idea that in order to market their products to be profitable, agro-food firms increasingly need to be embedded in a network of relationships that goes beyond those of spot markets (Belaya and Hanf 2016; Bouamra-Mechemache et al. 2016; Galizzi and Venturini 1999). However, it is less clear which kind of relationships are better suited for the different tasks to be performed and what are the most effective ways to promote these patterns of relations under different settings.

The aim of this paper is twofold. First, it discusses how the functioning and performance of food chains is affected by the way stakeholders are embedded in the chains, by the coordination modes, and by the kind of governance. Second, by depicting a few relevant kinds of agro-food chains, it seeks at showing that, in order to foster their competitiveness and capacity to remunerate all the involved stakeholders, the complexity of supply chains needs to be addressed and understood. As a side goal, the paper aims at contributing to highlight the existence of some drawbacks that may impinge the effectiveness of supply chain and, particularly, the gains that farmers may enjoy in participating to them. In order to reach its goals, the paper extensively draws from different strands of economic literature as well as from the authors' experience in the field coming from several research projects and consultancies for public agencies on related topics over quite a long time span.

The text is organized as follows: The second Section is devoted to shaping the theoretical framework for understanding the role and scope of supply chains as hybrid institutions. This also sets the basic terms and concepts for building the typologies of food supply chains. The section also provides a discussion of the main peculiar features of the agro-food sector that make the concept of supply chain particularly relevant for the sector. The third Section is an attempt to contributing to a first taxonomy of supply chains in the food sector by depicting six different chain typologies, their distinctive features, the possible overlappings, and the strengths and limits of each one. Some concluding remarks are given in the last Section.

A theoretical framework for supply chains as hybrid institutions

This section condenses the main theoretical insights provided by economic literature that help understanding organizational forms in the agri-food sector with a specific focus on supply chains. Supply chains belong to the vast category of hybrid institutions (Ketchen and Guinipero 2004): a term indicating complex organizational forms that seek at performing tasks that neither the market nor the firm can achieve under specified conditions. It is to the general category of hybrids, that includes supply chains among many others, that we will largely refer in this section.

Mainstream, neoclassical economics reduces the firm to an unspecified entity with few insights on what happens inside; all the light is shed on the purposes and outcomes

of market exchanges. This helped at better understanding the market and the ways it brings economic efficiency under a set of hypothesis.

Differently, many quite different strands of literature—such as New Institutional Economics, Business and Management Economics, Economic Geography as well as many contributions from Applied and Agricultural Economics—placed the firm, its functions, and its relationships different than the market ones at the center of the scene. So doing, these diverse approaches helped in better understanding the conditions that limit scope and efficiency of the market and provide the rationale for the diversity of organizational forms that are observed in real world.

As the forces that play an important role in the trade-off between the firm and the market are many and diverse, situations may arise and remain stable over time where neither of the two poles prevails and hybrid institutions arise. Besides, and not less important, hybrid institutions are required when there is a need for managing common pooled resources and/or when any other form of collective action is essential for effectively managing supply.

After discussing thoroughly these issues, the section addresses the existence of some relevant drawbacks related to hybrids and concludes with some basic terminology.

The trade-offs between markets and firms: factors pushing towards hybrids

The first element playing a role in determining to what extent the market and the firm can be effective alternatives for organizing production is the separability of the production process. Coeteris paribus, the less separable the different operations of the production process, the larger scope for the firm as it shall perform the whole process from raw materials and inputs, down to the final product. On the contrary, when the process includes separable independent stages, each single firm will not necessarily perform it totally in-house. In case the firm specializes in one or few steps of the whole process, it will, hence, need to exchange semi-processed intermediate products. Technological change, including improvements in transportation and storage of both intermediate and final goods, has, so far, largely increased separability.

The degree of separability in itself is not, however, a sufficient cause for more extensive use of the market. Segmentation will actually occur depending on the balance between advantages and disadvantages. Specializing in one or few functions can improve productivity (increase output/input ratio) and/or increase the ability to get higher quality/value output. The higher the gains associated to specialization the less vertically integrated will be the process and the smaller scope will be observed for one single firm with fewer interactions with the outside environment other than that of the market for final products.[1]

The major element that pushes towards specialization and hence towards more market is connected to idiosyncrasy of the inputs required at the different steps of the production process.[2] When these inputs are costly difficult to acquire and/or to manage, higher efficiency levels stem from specialization of the firms contributing to the different steps. Economies of scale can also be a source of idiosyncrasy when different fixed inputs are used that operates at different scales (Teece 1992).

One related issue is raised by the existence of different entry/exit barriers that may occur at the different stages of the production process. When this is the case, the

outcome can, again, be fragmentation with different sizes for the different steps. A sound example of all these aspects of idiosyncrasy is provided by agriculture that uses land as a basic input. The use of land has relevant implications in terms of the management of the production process as time is required for moving worker machineries and other inputs across the farm. This means that the efficient scale for primary production is typically smaller compared to that for the subsequent operations. Moreover, land is subject to relevant entry barriers, especially in densely populated countries, thus, further reducing the operational scale of farming. Last, idiosyncrasies are also related to land as it is part of the natural environment. Natural resources present variable features in different places and determine a strong rooting of the primary process in specific locations, while the subsequent steps are generally less rooted on one specific location and are definitely more mobile.

One additional aspect of idiosyncrasy is related to the timing of the different operations. Referring to the basic idea introduced by Georgescu-Roegen with the fund-flow theory (Georgescu-Roegen 1969), one more argument is raised for the increased efficiency obtained by separating the different operations. Once again, the primary sector offers a good example as many biological processes at the bases of food production may require extremely variable time spans. These last from few days, or even hours, to several years providing scope for more segmentation and specialization in the agri-food sector where it is not unlikely to find firms specialized in the maturing of products as it is the case in the cheese and cured pork meet industries.

Switching to the firm side of the market-firm trade-off brings other relevant arguments showing how complex can be the balance between the two. The first is provided by the complementarity concept.[3] When one input (e.g., knowledge, physical investment, technology) is jointly used by different steps of the production process, other things being equal, these will be more efficiently performed within one firm. In this sense, there may be relevant complementarities in information flows and in the generations and transmission of knowledge that may also push towards vertical integration. This is related to aspects such as: information asymmetries (that cause market failure) and contextualized informal knowledge.[4]

The concept of transaction costs provides one unique and sound perspective to look at all the situations in which the cost of using the market is higher compared to relying more on the firm. Clear enough, all the above factors are strictly connected one to each other. For example, complementarity creates a bound between actions and usually requires communication for reciprocal continuous adjustment and, hence, also trust enters in the picture. In the same streamline of reasoning, to the purposes of this paper, it is interesting to highlight, that producing high quality goods requires large information flows, a process of continuous learning and innovation that entails co-specialization between the resources used at the different stages. In other words, product quality is mostly multidimensional (Ponte and Gibbon 2006) and implies complementarities and includes relevant hidden features that call for information (Nelson 1970). All factors are calling for proximity and long-lasting relations so as in the vertical integration case.

As basically dealing with living organisms (e.g., plants, animals, soil, and microorganisms), primary production is intrinsically variable and non-standardizable. Unpredictable events, such as attacks from parasites or pathogens, climatic variations, and other environmental accidents, are everyday business for farmers that can hardly follow

pre-fixed, codified rules of conduct. Changes that occur in one step call for ongoing adjustments in subsequent ones. Adjustments, in turn, require communication, co-decisions, and alignment of actions. Knowledge is, hence, informal and requires face-to-face contacts, repeated interactions that are often tacit. The role of trust in case of uncertainty and information asymmetry also pushes towards more scope for tighter relationships as those within one same firm. All in all, households proved to be effective in assuring communication of informal knowledge among family members and its inter-generational transmission (Corsi 2009). The higher trust usually shared among family members also reduces the risk of free riding or other moral hazard behaviors. Also relevant to the ends of this discussion is the case of demand-driven vertical integration. That is to say when supply is shaped based on vertically integrated firm so as to satisfy peculiar requests from the consumers' side. A good example of this kind of situation is provided by the food sector where consumers' concerns about food safety have been a major driving force for the shortening of the supply chains, in some cases to the result of almost (quasi) complete vertical integration.

It should be clear from the above discussion that major features entering in the market-firm trade-off are many and diverse and that a clear dominance on either side is more likely to be an exception than the general rule. Hybrid institutions emerge when both sets of forces are at stake. Resulting hybrids would be of different kinds according to the set of factors that play a larger influence. Obviously, these forces are subject to change over time, continuously re-shaping hybrids.

Hybrid institutions: pulling factors

The production process may include functions that cannot be performed nor by the market neither by single firms. Hybrids can perform a number of them. Among these, building firm's reputation is of major relevance. Following Tirole's seminal contribution (Tirole 1996), it is well acknowledged that the reputation of the individuals is never only an individual matter. On the contrary, this is, at least to some extent, connected to the reputation of the group to which the individual (person or institution) belongs. Thus, reputation is related to social embeddedness and calls for collective action. This explains, for example, the role played by Country of Origin labeling (COOL) also in sectors with well-established brand strategies.

One particular case is that of small firms that may hardly be visible and build their own individual reputation in larger markets, unless they collaborate and somehow associate in order to build a common reputation at a larger scale. Usually, strategies as such are based on common features upon which the common images rely (e.g., the place of production, the technology adopted, one peculiar resource used).

Trust enters again in our picture as, by its very nature, it implies reciprocity and, hence, is, by definition, related to collective action. Building trust requires connections and being embedded in relational set-ups with partners, counterparts, suppliers, buyers, etc. Trust is a component of social capital; it can facilitate exchanges and lowers transaction costs. It is favored by repetition of interactions over time, by proximity and embeddedness in the local as well as in the wider society (Becattini 1991; Putnam et al. 1994).

Also external economies—both in the form of network economies and location economies—are extensively relational and may call for collective actions (Schmitz 1995).[5]

For example, web networks usually help small companies to be more visible both in the business environment (i.e., in B2B relationships) and in the market for the final product. In districts/clusters, close-by firms will be more efficient due to the cost-lowering effect of spatial proximity (Becattini 1991; Ketchen et al. 2004; Porter 1998). The spatial density of firms selling the same product is also attractive for buyers as it lower search costs. Service providers may also benefit from spatial density of client contractors and the like.

In the agro-food sector, the place of production is connected to important quality features (also see previous section). Thus, sharing the same place of production may imply sharing quality and reputation. This link between the place of production and product reputation is twofold. In fact, the produce is reputed after the place of origin in case the last is already renowned for the quality of its products. However, also the reverse holds: some places gain status after the increased fame of their products. In this sense, sharing the same location calls for location economies and reputational linkages and is a source for the need of collective action.

Issues raised by the presence of location economies are interlaced with those of the management of common pooled resources (CPR) (i.e., partially rival, partially excludable resources localized in relatively small areas) that also call for collective action at the local level (Ostrom 1990). Relevant examples for our line of reasoning are natural resources (i.e., the landscape water, biodiversity, traditional or wild landraces and so forth); also collective reputation in case this is connected to the production area (see above). When the reputation of the products is related to the place of origin, it acts as a CPR and requires collective management at local level.

Last but not least, one more collective action frequently at the origin of hybrids that pulls for horizontal coordination is aimed at countervailing the market power of larger scale firms. John Galbraith (1952) reversed the usual argument against actions usually considered as proactive forms for reducing competition. He highlighted the need and legitimacy for smaller firms to build countervailing action in order to rebalance the market power of large counterparts. Besides, as discussed above, smaller firms (i.e., those operating at inefficiently small scales due to barriers and market imperfections) need to associate somehow (i.e., in cooperatives) in order to be able to reach a more convenient scale at least for performing the key tasks in terms of their incidence on the unitary production.

Hybrid institutions: major drawbacks

Besides being able to efficiently perform relevant economic tasks, as discussed above, hybrids face some relevant drawbacks and limits that, in the author's view, tend to be disregarded and/or mistreated in the literature and by practitioners and policy makers. Among the major ones, we here recall:

- The functioning of hybrids faces a high level of complexity. Modifications in the internal or external relevant conditions require adjustments and reactions that need agreements or, at least, alignments of changing behaviors and actions by many and diverse agents. Let us take the example of firms that jointly invest for innovating. Innovation is often the adaptive answer of the supplier to the needs expressed by

the client. The client usually shares with the supplier the know-how and skills required for searching the innovative solution. The firms, thus, need to cooperate and specialize together, or, saying it with Teece, they co-specialize (Teece 1992). Co-specializing creates a link between the two (or more) firms. This link is not only associated to an increase of the value of the final product but also exposes the partners to losses in case one of the two breaks the cooperation. The process requires complex reciprocal repeated exchanges co-learning and other cooperative attitudes and activities.

- In case of relational governance or when the action of the focal company is not effective, the decision process is more *democratic*, adding complexity to the overall functioning and to the adjustment process. Coeteris paribus, this drawback is more likely to arise in large and heterogeneously populated hybrid institutions (Olson 1965).
- Complexity also implies that the timing of reaction to changes in the market setting tends to be slow. In a market environment of frequent and sudden changes, this may impinge the competitiveness of the hybrid.
- Firms involved in a collective action of any kind are linked by multifaceted relationships that are somehow twofold. On the one side, they are supposed to collaborate, to cooperate for the common ends that gave birth to the hybrid. Notwithstanding, they are, at the same time, either competing on the same markets or even for selling to the very same clients and, thus, they are likely to have conflicting interests. In other cases, they may also have diverging goals. All these sources of ambiguities may undermine reciprocal trust and raise scope for opportunistic behaviors. A partial recovery may be provided by setting internal control systems that, far from being fully effective, may reduce drawbacks to some extent while being, however, costly and demanding in time.
- The points already mentioned converge to one additional difficulty that lies in the increasing complexity of functions assigned to the management of the firms involved within the hybrid. In sectors such as agriculture, populated mostly by family-run business, competences for dealing with complex managerial tasks as such may, frequently, be missing.

Supply chains as hybrid institutions

We have already acknowledged that hybrids are many and diverse and that they are changeable over time, representing a vast and multiform way of organizing supply. The concept is increasingly regarded as a useful tool to get insights in understanding supply development patterns. Among the most common hybrids in the economic literature, it is worth recalling: clusters, industrial districts, producers associations, consortia, supply chains, networks, cooperatives and their associations, net-chains and so forth, with always new ones arising.

Obviously, in real world, also each of the previous type of hybrid forms a continuum where features mix-up and gradually changes one into the others as it is the case, for example, of supply chains (Gereffi et al. 2005). Also, interactions and intersections among the different types are frequent: each stakeholder can contribute at the same time to different chains, interacting right with the same partner or with different ones.

This behavior stems from more than one cause. Among these, it is worth to shortly recall: (i) The search for different markets and marketing channels, in order to seek the possibility to sell larger quantities and as a strategy for diversification and risk reduction; (ii) Reaching different market segments is also a necessary strategy due to the diverse quality of the final product. In fact, food quality is intrinsically variable due to climate and biotic factors that are never under complete producers' control. Quality may vary over time but also in the same production year, so that high and low qualities of the very same product are to be truly considered as conjoint productions. A common behavior in such cases is to market the different production slots through different channels in order to meet consumers need in each market segments and to maintain the producers' reputation; (iii) Selling through different channels may also help in stabilizing stocks; (iv) Global logistics companies—that thanks to the New Information Technologies (NITs) expanded impressively their capability to process extremely large amounts of information flows and to act just in time and right in place (Coe 2014)—operates not only vertically within chains but also horizontally across chains. As a consequence of the dense layers of intersections of diverse nature that exist among stakeholders operating in the agro-food sector, it should always be kept in mind that the typologies presented hereafter are just very simple skeletons of the much more complex real ones. All these different chains share the common trait of being populated by groups of firms, that participate in one production process and are somehow connected to each other by establishing relations that are not only spot market. In any case, two aspects are always essential: the *relationships* among stakeholders and the overall *governance* of the hybrid.

Relationships refer to the way agents interact with each other. This is usually referred to as the coordination issue, where market coordination is the most loose and casual form of exchange. Intermediate forms of coordination are given by those provided, for instance, by bar codes. Going further on the gradient of intensity of the relation leads to, first, informal agreements and commitments and, second, to formal contracts where agents are obliged to do, or not to do, something. Closer coordination modes can be really diverse forming a large spectrum. A few examples are joint ventures, licensing agreements, technology transfer agreements, and diverse kind of partnerships. Last, relations within one firm, obviously, represent the most tight and rigid kind of coordination.

Relationships are vertical in case the actors linked operate at different layers of the process (i.e., one farmer and one processor) or horizontal in case the actors linked are operating in the same production layer (i.e., the farmers in a cooperative). One more relevant aspect of coordination deals with the number and the role of stakeholders: relations can be bilateral with one direction in this case are classified as *sequential*; they can be bilateral with two directions and in this case are labeled as *reciprocal*; and can be multilateral and as such are defined as *pooled* (Lazzarini et al. 2001).

The term governance refers to the management of the stakeholders and of their actions; in other words, it refers to the entire process. More in details, governance is the actions of driving the coordination and the selection of the participants and the rules for distributing value added (Gereffi et al. 2005; Ponte and Gibbon 2006; Ponte and Sturgeon 2014). With reference to supply chains, the governance has been classified by Gereffi et al. (2005) in five main typologies that stem from the degree of participation

to the decision process of the different stakeholders. These are here presented very shortly: (i) *market*, relationships are spot and switching to new partners is easy and low cost; (ii) *modular*, suppliers customize their services/intermediate inputs to the customer's needs, they take responsibility, make specific investments (that are sunk costs outside that specific chain), and have core competences in the technology used; (iii) *relational*, transactions are complex, there is mutual dependence, and assets are highly specific for both sides. Reputation and trust are relevant features in this kind of governance; (iv) in *captive* governance, the led firm exerts strict monitoring and has control over the other firms; moreover, switching to other partners is difficult and costly; (v) *hierarchic* governance refers to the case of vertically integrated firms where managers/headquarters have full power over subordinates/subsidiaries/affiliates.

In real world, these basic kinds of chain governance can mix-up giving birth to many different combinations. In general, looser kinds of governance refer to situations in which the focal company exerts a feeble guidance on the supply chain, or in other words, the degree of drivenness is low. Furthermore, there is some degree of trust among all participants who have *voice* in determining actions and strategies and there are possibilities of mutual adjustments. Galizzi and Venturini (1999) explicitly connect the concept of market power to that of the firmness of the governance when they pose that a large company, that retains market power on its suppliers, does not need to integrate vertically in order to get full control over the whole process.

Supply chains for food

Premises

Supply chains are many and diverse, spanning from a simple straight line of firms, strictly guided by the focal company, to a loose bundle of firms basically interacting via spot relationships and with almost no governance other than market. This section discusses six different chain typologies relevant to the agro-food sector. These are representative of the sector in different ways. Some of them account for very large shares of the worldwide food markets. Others represent small market niches but are extremely dynamic and indicate path of changes whose importance goes far beyond the actual figures.

The six models portrayed can be roughly gathered in two groups where the first includes supply chains that represent the bulk of agro-food production at global level; here, we find food supply chains whose governance is in the hands of a *large retail company*; those led by *global processing companies*; and those with a *cooperative* as focal company. The second group mainly refers to emerging chains focused on high quality products with a limited but rapidly growing shares in different food markets. The first case is that of traditional/typical products protected by a *geographical indication*; the second is more loosely defined as the *short chain* case; while, the last chain type is led by *retail companies specialized in high quality* or excellence food. A comprehensive overview of the six supply chains is provided in Tables 1 and 2 that also allow for immediate comparisons of their main features. The discussion and the content of the figures are based on the literature as well as on the authors' direct experience in the field and shall be regarded as a theoretical framework for the analysis and comprehension of how supply chains are organized in the food sector. No original data providing empirical evidences of the suggested picture is given in this paper.

Table 1 Agri-food chains: a comparative overview

Supply chains	Driving needs/keywords	Target market	Quality/information/trust	Innovation	Role of the place of origin	Role for farms
Large retail company	Convenience price choice	Global	Standardization certification retailer reputation/brand	++	-	-
Global processing company	Convenience innovation differentiation	Global	Standardization trademarks/patents producer reputation/brand	+++	-	-
Coop	Supply driven scale economies bargaining power	Global/local	Standardization certification coop reputation	+	++	++
Geographical Indication	Quality tradition places	Local/global high segments	GI name product specification	-	+++ (Strong roots in 1 location)	+ + (Selling mainly processed food)
Short chain	Freshness genuinity environment face-to-face rel.	Local direct/personal high segments	Informal/non codified	-	+++ (Strong roots in 1 location)	+++
Specialized high quality retailer	Story telling novelties culture/etnicity dietary/healthy environment	Global high segments	Brand/reputation of producer AND retailer	In marketing +++	+++ (Sourcing from many location but origin known and key)	+ (Selling mainly processed food)

[a]The sign "-" indicates a feature that the author poses as not relevant for the correspondent chain; while the sign "+" indicates a relevant role; "++" is very relevant; and "+++" stands for extremely relevant

Table 2 Coordination and governance in theagri-food chains

Supply chains	Focal company/institution	Kind of governance	Hardcore of the Hybrid	Relations	Vertical relations	Horizontal relations
Large retail company	Retailer	Captive	Specialization knowhow scale economies flexibility	Sequential	+++	-
Global processing company	Processing company	Captive	Specialization knowhow scale economies flexibility	Sequential	+++	-
Coop	Coop board of managers/assembly	Relational	Scale economies efficiency collective action countervailing power	Pooled	++	+++
Geographical Indication	Consortium major stakeholders policy m./local bureaucracy none	Relational	CPR territory/reputation external economies collective action	Pooled	++	+++
Short chain	Farmer	Vertical integration and modular	External economies territory market power complementarities demand-driven	Reciprocal	+	++
Retail company specialized in high quality	Retailer	Modular/relational	Specialization knowhow scale economies flexibility market power complementarities demand-driven	Sequential and reciprocal	++	+

[a]The sign "-" indicates a feature that the author poses as not relevant for the correspondent chain; while the sign "+" indicates a relevant role; "++" is very relevant; and "+++" stands for extremely relevant

A tentative taxonomy

Supply chains driven by a large retailer

These chains are almost anywhere around the world and holds extremely large and still increasing shares of total turnover of the food sector. Their massive presence is the result of a growth that took place at a very fast pace during the last decades even in the so called emerging economies and it is still ongoing (Sexton 2013). The retailers that govern the supply chain operate at a large scale and in many cases are multinational global companies (i.e., Wal-Mart, Carrefour, Tesco, just to recall the world largest ones). This includes global sourcing and multinational locations of the stores (Table 1). Besides the retailer, these chains are populated by many actors such as farms, processing firms, logistics companies, intermediaries, and providers of different kind of services (including market analysts, advertising agencies, lawyers and experts in legal matters). The functions performed by these actors require different skills and different times and have diverse capital investments and efficient scales, thus partially explaining the complexity of the chain.

This complexity of the chain structure and functioning calls for vigorous governance. The different sizes and roles of the stakeholders—with the retailer at the very vertex of this pyramidal structure—allow for an essentially captive governance of the retailer (Table 2). The relationships that give life to the chains are basically vertical sequential. This goes from spot market transactions to long-term contracts that include rules of production, specified in details, and control systems. One major issue is product quality that shall be standardized and constant over time (Table 1). To this end, contracts usually include quite strict rules of production (set by the retailer) and technical assistance and controls. Third party certifications on safety and other quality features are widely used; namely, Global-g.a.p. and Local-g.a.p,[6] as well as ISO standards and private standards set at company level. In cases where relevant concerns for innovation involve raw materials and/or intermediate inputs, joint projects/actions may be undertaken with the suppliers, including forms of collaborations and co-financing.

The retailer enjoy a high degree of flexibility in shaping and re-shaping commercial relationships; in other words, he is able to switch rapidly from one supplier to a new one thanks to its power and in response to changes in demand or in any other relevant feature (Table 2). Flexibility adds more strength to the model and contributes to explaining its success.

As the needs that drive these chains basically relate to consumer's search for convenience attributes, low price and wide choice (Table 1), one more factor that pushes towards their complexity and variety is the focus on catching the diverse and changing demand trends. This is at the basis, for example, of the differentiation of store formats (i.e., megastores, supermarkets, convenience stores, discounts) and locations (shopping malls, residential area, downtown, etc.; however, their internet sales are also becoming very relevant).

These chains have the capacity to properly sizing the scale of each steps and the possibility to raise scope economies. Large retailers offer an extremely wide range of products and have extended opening hours, allowing also consumers to enjoy scope economies via saving time while shopping; Russo 2013). Altogether, these give a tremendous cost advantage to these chains (Sexton 2013; Coe 2014). This, together with the bargaining power of the focal company and its capacity to retain large shares of the total value added created in the chain, allows for making significant investments in

marketing and especially in reputation (for strengthening retail brand loyalty) and innovation (basically to catch-up with large processors) (Table 1) (Galizzi and Venturini 1999). These investments add capacity in understanding and matching the final demand; a feature with respect to which the retailer has always many advantages thanks to its closeness to consumers.

For processors and, even more, for farmers, being part of one of these market channels has strong implications, among which it is here worth recalling:

(a) Providers often operate under contracts that give a multiple-years' time horizon for organizing production and planning their investments. This situation has, undoubtedly, positive implications, especially for smaller marginalized farms that otherwise may face major difficulties in accessing markets (Pulina 2010). However, the retailer usually has the possibility to exclude a provider in case it is no longer performing and/or competitive. When less stable relationships are preferable for the focal company, competition among suppliers is enhanced by the governance strategy of the buyer that holds the right to break the contract (Baritaux and Houdart, 2015).

(b) Large volumes are required in order to avoid fragmentation of purchases that increase transaction costs (Baritaux and Houdart, 2015; Ponte 2007). Smaller producers and those that are not embedded in any hybrid institutions on a stable fashion may have no access to large retailers as they may not be able to guarantee they can meet quantity/quality thresholds and find it difficult to coordinate with the due complex logistic functions.

(c) One more obstacle is represented by the financial capabilities required to manage time gaps between supplying products and receiving payments (Agrosynergie 2008). Not to say about listing fees often asked by the retailer (Ponte 2007).

(d) Few cases are, however, emerging of farmers operating in these chains in a less captive position thanks to the increasing demand for fresher, more genuine, and local food. For example, some outlets of large retailing companies "host" raw milk dispensers from local producers and individual stands with local seasonal products. The major implication is that large retailing companies have increasing interest in valorizing connections with the primary sector, or at least with some parts of it. More than a change in the chain nature, this can be regarded as a sort of *mimetic* attitude of the chain.

All in all, these chains led to a progressive squeezing of producers' revenues (and profits). Less captive situations may occur in cases where the farmers manage to organize (through producers associations and/or coops) for increasing their bargaining power (Menard 2004; Yu and Bouamra-Mechemache 2015).

Supply chains driven by a global processing company

Large processing firms with a very well established reputation on final markets usually hold the governance of the food chain in which they operate (Table 1); they are usually multi-locational globalized corporate companies, buying raw materials and other inputs from a very large set of farms/firms that are in a quasi-captive position and are connected to the focal company mainly with vertical sequential relations (Table 1 and 2).

The market for their final product(s) tends also to be global. They use diverse market channels, including large retailers, more traditional outlets, and in some cases, they also develop their own branded retail chains. When selling to large retailers, they are probably the only kind of stakeholders that enjoy almost symmetric bargaining power with respect to the buyer, while in all the other cases, they are clearly leading the transactions and imposing their conditions.

The major assets of these companies are the know-how and the reputation associated to their trademark (Table 1). Quality and innovation are their main competitive advantages (Table 2). The price premiums they get over generic substitutes allow for profits and for investments in further promotion and innovation. As said, in these chains, innovation is core and the focal firm makes huge investments in R&D trying to be always ahead of competitors and imitators. Patents are commonly used to protect innovations/products, while protocols and standards adopted within the chain are kept as secret as possible. The internal protocols drive the task of coordinating the provision of raw materials and intermediate inputs.

Like in the previous case here, also scale and scope economies play a major role in shaping the structure and functioning of the supply chain together with timing, constraints that bound production of raw material to land, and other sources of idiosyncrasies that differentiate the pattern of strengths and weaknesses at the different stages of the process that is well segmented (see Section "A theoretical framework for supply chains as hybrid institutions").

Similar to the case of chains driven by large retailer, and probably even more than that, these large processing firms are able to quickly follow changes in demand trends, and even to anticipate and influence them. They also enjoy similar mimetic capabilities that allow them to *dress*, so to say, their products according the always changing demand trends. One more similarity between these two kinds of chains is that they face the opposition of small but increasing groups of consumers that fights against market (and political) power of large companies. As they feel they have no voice, they choose the *exit* option boycotting the goods of such companies (Fridell 2006).

From the farmers' perspective, the consequences and challenges of accessing and operating in this kind of chains are similar to the ones already stated for the previous chains. Furthermore, considering that these chains are dominated by the processor and deal only (by definition) with processed food, the visibility and role of the primary sector is even smaller.

Supply chains driven by a cooperative

One more chain typology has a large cooperative as focal company. Historically, coops are active and play a relevant role in the organization of food supply worldwide, although, their nature and role varies significantly across the different countries. Coops are themselves hybrid institutions whose pillar is a strong and stable horizontal coordination set populated by pooled relationships (Tables 1 and 2). Coops usually are associations of farmers; although, there may be coops whose members are processors, retailers or other kind of stakeholders. As these chains are populated by actors belonging to the same layer of the production process, their governance is basically relational with the coop management that acts as the focal company and respond to the assembly of members (Tables 1 and 2). In principle, all members are expected to enjoy

symmetric decisional power; however, as they may differ widely in size and in other relevant features, democracy is not always fully assured.

The small size of farms, that often operate at suboptimal scale, with all the related inefficiencies, has traditionally given a relevant scope for coops in the food sector compared to others (see Section "A theoretical framework for supply chains as hybrid institutions"). Coops are usually engaged in: (i) helping their members to improve efficiency; (ii) gaining better access to know-how, services, and all sorts of inputs; (iii) building countervailing power for buying inputs and marketing products. Consequently, coops are active in many fields such as buying inputs and/or sell outputs; acquiring the appropriate know-how, including investing in R&D; investing in storages, machineries, and any kind of facilities that are also managed by the coop; developing marketing strategies; and exerting lobbying actions in the members' interests.

The appropriate size of coops depends, obviously, on the reference market and on the tasks that should be accomplished, so that coops are differing in size. However, as many coops act in different fields (see above), significant degrees of flexibility are achieved by creating different layers of coops with the appropriate size and performing the different tasks. However, this is not always the case, as, only countries with a developed cooperative sector can enjoy such a complex and more effective structure. In such cases, a system of vertical relationships among coops is put in place, with first level coops (i.e., coops whose members are farmers) that are nested into second level coops (i.e., coops whose members are coops), and so forth.

Depending on the kind and quality of management, coops may be more market oriented or more member/producer oriented. In other words, this means that, in the first case, the coop seek at actively looking for its targets and may induce members to undertake major changes and even to challenge themselves. The second case occurs more likely when the coops are more committed in delivering services to the members and in less pro-active in the marketing areas. In such cases, it may happen that no effective incentives for product quality are in place. In such cases, quality standards for the raw material delivered by members to the coop are aimed at minimizing products found to be defective with the goal to limit refusals and members' losses in the short run. This has clear negative effects on the chain competitiveness as it leads to poor quality of the final product and, over time, to poor reputation (Carbone et al. 2010). Such situations conflict with the goal of targeting at high quality markets and may cause a mismatch with the intrinsic vocation of coop to valorize quality and the territory (at least the first level ones) as they have strong roots in the area of production where their members operate. Relaxed quality standards and weak control systems may allow for free riding behaviors that impinge the effectiveness of the collective action that is the actual pillar of the coop (Ortmann and King 2007) (Table 1). Evidences on effectiveness and efficiency of coops are mixed in the literature, suggesting that contextual factors do play a major role in their functioning and competitiveness (Agrosynergie 2008). Following the above description and the arguments brought on a more general ground about drawbacks of hybrid institutions (see Section "A theoretical framework for supply chains as hybrid institutions"), it is not difficult to understand that one major weakness of cooperatives resides in the complexity and time requiring process of its relational governance where reciprocal trust and the management capacity to align interest and actions

are as important as efficiency issues and availability of marketing skills and expertise.

Supply chains for geographical indications

Geographical indications (GIs) are names for traditional food that refer to the location where production takes place (Table 1).[7] All the producers based in the area are entitled to sell their product with the name of the place of origin and, thus, they share the reputation that is a CPR and also depends on how the PDO/PGI is managed (Menapace and Moschini 2012). Stakeholders participating in the PDO/PGI are farmers, processors, firms in charge of the aging process (as it may be the case in the cheese and cured meet industries), and those specialized in the packaging. Participating in a GI is motivated by the necessity to reach higher volumes to be marketed under the same name in cases when producers are individually too small in order to affirm their own reputation. Both horizontal and vertical relationships (pooled and sequential) shall be in place (Table 2). The law indicates the Consortium that gathers all the stakeholders involved in the PDO/PGI as the focal institution of the chain. Accordingly, the Consortium is in charge of aligning actions, settling controversies among members, detecting frauds, controlling and protecting product quality and its reputation and, finally, promoting the PDO/PGI on the market (Tables 1 and 2) (Desquilbert and Monier-Dilhan 2015). It is clear that the whole apparatus behind the collective reputation of a PDO/PGI is complex and delicate (Carbone 1997; Zago 2015).

It is not unlikely to find PDO/PGIs that remain on paper or sell only very small quantities compared to the potentials of the area. This happen when the PDO/PGI is de facto set by local policy makers or by producers' associations who do not effectively involve stakeholders. In turn, this is more likely to be the case when the chain is populated by firms that are so small that face severe difficulties in directly marketing their products and, thus, there is almost nobody able to enjoy the potential benefits of the PDO/PGI (Carbone et al. 2014). In such cases, the product specification that rules the GI may include features that producers may not be able, or willing, to fulfill.

Reflecting different outfits of the supply chain, PDO/PGI products are sold through different market channels, from supermarkets to traditional specialty shops to the trendy specialized retailers: directly by the producer on-farm or via web. According to the different channels, they can be truly high quality niche products that gain price premiums over their generic substitutes or may be considered almost as commodities where price competition is definitely intense (Sckokai et al. 2013; Carbone et al. 2014). This variety of situations within one unique quality scheme has been addressed as a cause of reputational puzzling that reduces the effectiveness of the GI (Carbone 1997).

Due to freedom of entry, often GIs involve highly heterogeneous groups of stakeholders. As the chain is, by definition, based on the managing of a CPR, a major threat to their functioning is the effective alignment of actions. The larger the protected area and the number of producers (together with their heterogeneity), the more difficult will be to reach an effective agreement for the GI governance and the more likely will be that conflicts and free riding behaviors arise. To this respect, it is worth recalling that one of the major concerns about GIs regards cases where the governance falls in the hands of one (or few) very large firm(s) that will drive the GI in its(their) own prevailing interest. Usually, this will be a large processing firm. Considering that under the GI

the farmers are supposed to sell to processors within the GI (otherwise they will not get for their raw material the higher value that the GI worth), it is easy to conclude that in such cases farmers can paradoxically find themselves in a captive position with an even worsened bargaining capacity.

Furthermore, as being gathered under the same PDO/PGI requires cooperation, while, at the same time, enhances competition, free-riding and other opportunistic behaviors may arise that may damage some of the producers and as well as the consumers as pinpointed in Section "Hybrid institutions: major drawbacks" (Carbone 1997; Dentoni et al. 2013).

It should be very clear now that the difficulties of action discussed in Section "A theoretical framework for supply chains as hybrid institutions" with respect to hybrids may be very relevant in the case of GI as conditions for heterogeneity, weak alignment of interests, ineffective governance, and twofold relationships are recurrent.

It is worth to underline that GIs may paradoxically suffer from their own success. First, in cases where the reputation is very well-established, this somehow transforms the GI into an almost generic name. Marseilles soap, Champagne sparkling wine, Parmesan cheese, among others, are GIs that over time are increasingly used with reference to their generic substitutes. In such cases, it may be hard to protect and limit the use of the name just as it is the case in very well-known trade controversies between the EU and USA.

The second threat to successful GIs comes from GI *sounding* that, like in other sectors, is rapidly spreading within, as well as across, countries. Famous brands face just the same problem all over the world. Here, it is worth recalling that reactions to counterfeits and imitations in case of GIs are more difficult to put in place due to collective action constraints and to limited financial resources to be devoted to the discovery of such situations.

Short supply chains

Short chains where the focal company is a small farm or processing firm, or even a very small scale retailer and where there are few passages from the raw material to the final consumer, all mainly confined in local markets are increasingly common in the food sector although still represents a niche (Abatekassa and Peterson 2011; Renting et al. 2003).

These chains are essentially demand-driven as they respond to consumers' inclination for simple and local food that is assumed to be more genuine and fresher (Tables 1 and 2). Consumers associate short chains to the idea of traceable and transparent processes. Both aspects are seen under a different perspective compared to the previous chains where information is conveyed formally and codified by certifications and standards. Consumers in short chains tend to privilege and prefer face-to-face relationships that are regarded as more reliable and able to bring more warm connections among human beings and a *personal touch* to transactions. In connection to the previous point, boycotting global companies and anti-consumerism are ideology-driven behaviors that also lead to a preference for small local businesses and short chains (Fridell 2006). Moreover, these consumers often wish to foster smaller, family run business with stronger territorial roots that are regarded as the guardian of traditions and local values and promise more equitable market relations.

One more opportunity for short chains comes from the increasing demand for combining food shopping to sightseeing. This is especially relevant for more touristic areas

where arts and environmental amenities go together with the production of traditional, typical food and beverages.

Farmers target to this dynamic market segment that offers new expanding opportunities and occasions for more equitable market relations (see Section "A theoretical framework for supply chains as hybrid institutions").

Alternative ways of marketing goods in the short chains are on-farms' shops, farms' stores in nearby towns, farmers' markets, and deliveries to final consumers (whether or not organized in groups) at their homes, in offices, schools, or even in shops. Small businesses may face difficulties in building their own reputation due to little visibility, limited financial capabilities, and intense competition. While in the local market their dimension is not so small in relative terms, in the larger market, the NITs that allow for e-commerce enable also small producers to gain visibility and to reach farther clients. Under this respect, some authors have pinpointed the possibility, and advantages, of using social networks as a cheap and effective tool to reach this goal (Dentoni and Reardon 2010). One more possibility for them is to sell through close-by outlets of large retailers. Advantages and disadvantages of each channel, as well as complementarities among them, are product and location specific.

Collective actions among small producers from the same, or close-by, area overcome, at least to some extent, some relevant constraints faced by short chains when populated by individual farm/producers. The first constraint is represented by the small basket of products available in each single moment as well as over time. Also, each produce is available for a shorter period. In the whole, it is difficult for a single farm to size properly the supply (especially for perishable produces) as, on the one side, it shall manage stocks in order to limit shortages and surpluses. These constraints impinge consumers' choice and reduce the attractiveness of short chains so that if the short chain can manage to gather different producers it will take advantage of pooling their supply for better matching final demand.

In some cases, farms may vertically integrate downstream the process to the final product as a strategy for consolidating their market shares via a larger visibility in a smaller final market and via more direct relationships with final consumers. Besides, producers also aim at increasing their quota of the final value added. Furthermore, internalizing diverse functions may seek at a better use of owned inputs (typically family labor force). Seasonality of farm production creates temporal unevenness in the use of some inputs that in non-family farms may call for segmentation (as discussed in Section "A theoretical framework for supply chains as hybrid institutions") but, diversely, in family farms where the cost of labor is implicit and often imply marginal labor force, the internalization of different functions may be convenient and increase overall efficiency.

The downside of such a strategy is that increasing the kind and number of functions to be performed in-house is not at all trivial, especially for small farms. Farms that wish to engage in the final product market necessarily need, at least to some extent, to perform more tasks and reorganize the whole process and set of functions. The challenges involved in the process are frequently neglected or undervalued. First, dealing with the final consumer is complex, takes time, and requires appropriate facilities and specific competences. Producers are usually not trained to this end and tend to underestimate competences and investments that may be necessary. The lack of awareness

not only pertains to the marketing sphere but also the other tasks that will be performed internally. Referring again to the previous section, it is clear how operating the different tasks at scales that may not be optimal adds causes of inefficiencies that influence unitary costs.

Forms of horizontal coordination can be put in place in short chains (Table 2) to help overcome these limits. The farm/firm acting as focal and selling its product(s) usually gather products by nearby producers and sell them together with its own. In this way, the variety of the supply increases and the calendar is prolonged while supply may also result in a more stable and reliable pattern. Furthermore, significant scope economies may arise (i.e., sharing transport cost and/or the cost connected with the selling facilities and of labor) improving the cost effectiveness of the chain. So, doing the firm at the end of the chain becomes the focal company of the chain also thanks to the insights gained over demand trends.

Supply chains driven by a specialized high quality retailer

In this kind of chain, the focal company is a retailer specialized in high quality food (e.g., Eataly, iGourmet, Eat's Food Market, Wholefoods). Here, we deal with a different sort of retailer with respect to the one depicted in Section "Supply chains driven by a large retailer." These store chains are large (although not as large as global world retail companies presented before) and may be nationally or internationally based; they may sell via outlets as well as on the web. They sell high quality food specialties featured as *traditional ethnical organic,* and so forth (Table 1). Product quality is the key element of their reputation and their true competitive leverage while price in itself is far less important; although, of course, the price/quality ratio is altogether important. The core capacity of these retailers is to scout the excellence of food around the world and to tell their stories to the wider public (Table 1). They have the ability to create and launch the so called "food icons".

The governance of the chain is definitely less captive that in Section "Supply chains driven by a large retailer" thanks to the reputation and capacity of the producers and the *uniqueness* of their products and territories. The more balanced equilibrium between the focal company and the other stakeholders led to elements of modularity and relationality in the governance of such chains where reciprocal and sequential vertical relations between the retailer and the producers define the coordination mode (Table 2). The basic message delivered to consumers is of an intimate alliance and deep knowledge between the seller and the producers; where the seller—a gourmet specialist—is committed to linking directly these excellences of food with the consumer. The retailer is a true story-teller, able to tailor its own story on each product. Small producers, handicraft productions, typical products from small areas may find here their window in the larger market.

These chains bridge relevant features of large retailers with those of GIs and short chains. Being large retailers, they enjoy scale and scope advantages that bring higher possibilities to offer a wider set of products and to invest in image, reputation, and outlets. Furthermore, being specialized and very effective in the marketing functions, they definitely outperform small farmers specialized in high quality that look at this channel as an effective way to be visible and enjoy market valorization of their product relying on the retailer capacity that in turn rely on their capacity to produce outstanding quality.

However, as recalled above, recent trends in large retailer pose a major challenge to these chains as they are developing a quite sophisticated capability to welcome and/or develop this very market segment in their outlets. Increasingly, often their stores display well visible and demarked spaces devoted to local producers, to food specialties and/or ethnic food, somehow mimicking the atmosphere/ambiance of the gourmets' stores.

Conclusions

The discussion presented in the previous pages was aimed at shading light on the essential role that relationships going beyond mere market transactions do play in shaping the organization of production. The paper focuses on food supply chains that are here framed as hybrid institutions. In this light, it shows how the overall outline of the chain, together with the competitiveness of the final products and the capacity of each stakeholder to capture shares of the value added, rely deeply on the kind of governance of the chain and on the nature, the intensity, and the stability of the relationships that embed each stakeholder. This is particularly the case of highly fragmented sectors and when quality, innovation, and other idiosyncratic features are relevant.

Small producers who go spot on the marketplace and are not embedded in any set of more stable relationships likely will suffer from low investments capacity, low human capital, and know-how and thus will be less innovative and will produce lower quality. All in all, they will have no market power and make no profits.

Producers embedded in supply chains framed in the context of a captive governance face tight relationships that may ensure market access in the short run but do not provide any stable operating framework and give them no voice in the shaping of the relationships and in the targeting of the chain product(s). The captive nature of the governance implies that the relations that command on the production process and on the rules for sharing profits may be changed or even broken easily and quickly by the focal company almost at his own convenience.

Supply chains populated by reciprocal and pooled relationships and ruled by a more relational kind of governance may offer many of the advantages connected to hybrids in terms of efficiency, better market access, and improved bargaining power. However, the paper has also discussed relevant difficulties and drawbacks that may arise due to complexity of functioning, heterogeneity of stakeholders, and ambiguity of the nature of relations among them.

All the above mentioned features have been discussed also with reference to six different agri-food supply chains. These are populated by different stakeholders and shaped by different kind of relationships and with different forms of governance. It has been shown how each of these chains enjoys its own strengths and suffers from specific weaknesses and constraints. The discussion of these chains highlights situations where the intensity and kind of relationships and the form of governance are not appropriate, thus, compromising the sustainability of the chain and the competitiveness of its product(s).

The policy makers in charge of framing the institutional settings in which the agro-food sector shall operate are increasingly acknowledging the importance of the relational environment in which the various stakeholders operate. Under this respect, it

must be said that, compared to present, up to the recent past, the awareness of the importance of such dimension was lower among researchers, policy makers, and even practitioners. For example, the regulation for GIs and the set of related incentives included in the CAP to foster the adoption of GI schemes had not been enough determined and clear in acknowledging the chain dimension behind GIs until the last revisions of the policy. Some authors have seen in this a reason of the reduced effectiveness of such schemes so far. Analogous considerations may be done also for different measures included in past Rural Development Regulations by the EU that where, for example, fostering short chains, diverse forms of direct selling, targeting the measures more on the single beneficiary than of the collective actions that could have fostered the goal.

In conclusion, it is forth to pinpoint, that besides these factors, there are some comprehensive and somehow underlining conditions that play a major role in the possibility to shape effective supply chains, and more generally effective hybrids that are commonly undervalued when not neglected *tout court*. An overall lack of social capital can be related to (and it manifests itself in) the nature of firms and their behaviors. In particular, the discussion showed how the scarcity of trust impinges collective action. Trust has been found as a major substitute of formalized forms of coordination and alignment, especially in a framework of informal relationships and weak governance (Menard 2004). Furthermore, McKnight et al. (1998) found that trust is even more important in the initial creation of a hybrid institution. Trust and reciprocity may reduce the ambiguity of the competition-cooperation attitude reinforcing the capacity to cooperate that is a necessary ingredient of the relationships within hybrids.

Clear enough, also the effectiveness of the public sector plays a major role together with the functioning of a legal system. Marsden et al. (2000) underline the relevance of the role that effective regional agencies and active producers associations may play in promoting GIs and designing competitive short chains by the means of setting incentives to foster the appropriate relational behaviors.

Endnotes

[1]The notion of efficiency is directly connected to that of specialization and also associated to the possibility of exchanging. Regarding hybrids, this notion is core, for example, in the literature on industrial districts (Marshall and Marshall 1920; Becattini 1991)—one of the diverse forms of the hybrids—where one of the major strengths is to be found in the extreme specialization of the firms and the consequent extensive use of the market.

[2]Idiosyncrasy refers to the specificity of an investment (input, technology, or skill) that is valuable only in one well-determined function and otherwise useless.

[3]Complementarity is meant as the necessary association between two or more actions, or inputs, as one is useless, or less valuable, without the other.

[4]Informal knowledge is related to learning-by-doing practices, is acquired through personal experience, outside of the formal learning environments. Contextual knowledge refers to knowledge that is valuable in specific contexts but not in others; this second concept is related, but not coinciding, with the previous one.

[5]External economies, also referred to as externalities, are economies associated to conditions that are not internal to the firm/market. Network economies are benefits

generated to the firm by the network in which the firm participates. Location economies arise when a firm benefit from a specific location. The concept has been widely developed in different fields of economic thought among which is here worth to recall the Industrial district literature (for a contemporary rediscovery of this Marshallian concept, see above all, Becattini 1991).

[6]Local-g.a.p. is a new program of the EHI Retail Institute aimed at helping producers in less favored countries to meet the requirements of Global-g.a.p.

[7]The European scheme (Reg. EU 1151/2012 ex Reg. CEE 2081/1992) includes two different GIs: the well-known Protected Denominations of Origin (PDOs) and Protected Geographical Indications (PGIs). For simplicity purposes, we will not distinguish between the two and will refer to the PDO case, with the implicit assumption that our line of reasoning basically holds for both.

Acknowledgements
I wish to thank Michele De Benedictis who passed away at the beginning of 2016, on January 10; he read a previous version of the text and generously gave me his straightforward comments. I am also indebted to Luca Cacchiarelli, Roberto Henke, Maria Nucera, and Alessandro Sorrentino for their keen observations. Along many years of teaching, the students attending my classes stimulated interesting discussion that raised new insights on the topic addressed in the paper: I like to acknowledge their intelligence experience and passion. Last but not least, I am grateful to the anonymous reviewers for their attentive and competent reading of the previous version of the text which they significantly helped to improve. All errors are mine.
The first version of the paper was an invited contribution for the second plenary session of the Sidea Conference held in Viterbo-Italy, September 18, 2015, an abridged version of that paper has been published in the proceedings of the Conference (Carbone 2016).

Competing interests
The author declares that she has no competing interests.

Received: 11 March 2016 Accepted: 4 January 2017
Published: 13 February 2017

References

Abatekassa G, Peterson HC (2011) Market access for local food through the conventional food supply chain. Int Food Agribusiness Manage Rev 4(1):41–60
Agrosynergie (2008) Évaluation des mesures concernant les organisations de producteurs dans le secteur des fruits et légumes. Rapport final. Downloaded from https://ec.europa.eu/agriculture/sites/agriculture/files/evaluation/market-and-income-reports/2008/producer/rapport_final_fr.pdf. Accessed 13 Jan 2015
Baritaux V, Houdart M (2015) Relations fournisseurs-grande distribution dans les filières agroalimentaires. Une analyse de la trajectoire d'une démarche « filière qualité », Economie Rurale 346(2):15–30.
Becattini G (1991) The Marshallian Industrial Districts as a Socioeconomic Notion. In: Pike F, Becattini G, Sengenberger W (eds) Industrial Districts and Inter-Firm Cooperation in Italy. International Institute for Labour Studies, Italy
Belaya V, Hanf JH (2016) The dark and the bright side of power: implications for the management of business-to-business relationships. Agric Food Econ 4:18
Bouamra-Mechemache Z, Duvaleix-Tréguer S, Magdelaine P, Ridier A, Rieu M, You G (2016) Relations fournisseurs-grande distribution dans les filières agroalimentaires. Une analyse de la trajectoire d'une démarche «filière qualité». Economie Rurale 346(2):15–30
Carbone A (1997) Problems with 'shared brand names' for the food sector. In: Schiefer e G, Helbig R (eds) Quality management and Process Improvement for Competitive Advantage in Agriculture and Food Proceedings of the XLIX EAAE Seminar. Universitat Bonn-ILB, Bonn (D), pp 329–338
Carbone A (2016) Shaping food supply chains to enhance product quality. Riv Econ Agrar 71(1):19–29
Carbone A, Galli F, Sorrentino A (2010) Relazioni tra stakeholder e coordinamento lungo la filiera: il caso della vitivinicoltura laziale. Riv Econ Agrar 65(3):385–415
Carbone A, Caswell JA, Galli F, Sorrentino A (2014) The performance of protected designations of origin: an ex post multi-criteria assessment of the Italian cheese and olive oil sectors. J Food Agric Ind Organ 12(1):121–140
Coe NM (2014) Missing links: logistics, governance and upgrading in a shifting global economy. Rev Int Polit Econ 21(1):224–256
Corsi A (2009) Family farm succession and specific knowledge in Italy. Riv Econ Agrar 64(1-2):13–29
Davis JH, Goldberg RA (1958) A concept of agribusiness. Graduate School of Business Administration. Harvard University, Boston
Dentoni D, Reardon T (2010) Small farms building global brands through social networks. J Chain Netw Sci 10(3):159–171
Dentoni D, Glynn T, Tonsor T, Calantone R, Peterson HC (2013) Brand competition with geographical indications: which information does lead to brand differentiation? NewMedit 4:14–27
Desquilbert M, Monier-Dilhan S (2015) Are geographical indications a worthy quality label? A framework with endogenous quality choice. Eur Rev Agric Econ 42(1):129–150

Fonte M, Cucco I (2015) The political economy of alternative agriculture in Italy. In: Bonanno A, Busch L (eds) Handbook of International political economy of agriculture. Elgar Publishing, Gloucester
Fridell G (2006) Fair trade and the international moral economy: within and against the market. In: John R, Tony S (eds) Global Citizenship and Environmental Justice, vol 17. Rodopi, Amsterdam
Galbraith JK (1952) American capitalism: the concept of countervailing power. Harmondsworth, Boston
Galizzi G, Venturini L (1999) Towards a theory of successful vetical ocoperation in the food system. In: Galizzi G, Venturini L (eds) Vertical relationships and coordination in the food system. Physica-Verlag, Heidelberg-New York, Heidelberg
Georgescu-Roegen N (1969) Process in farming vs. process in manufacturing: a problem of balanced development. In: Papi U, Nunn C (eds) Economic problems of agriculture in Industrial Societies. MacMillan, London, pp 497–533
Gereffi G, Humphrey J, Sturgeon T (2005) The governance of global value chain. Rev Int Polit Econ 12(1):78–104
Goldberg RA (1968) Agribusiness coordination: a system approach to the wheat, soybean and Florida orange economies. Harvard Business School, Boston
Hobbs JE (1996) A transaction cost approach to supply chain management. Supply Chain Manage 1(2):15–27
Ketchen DJ Jr, Guinipero LC (2004) The intersection of strategic management and supply chain management. Ind Mark Manag 33(1):51–56
Ketchen DJ Jr, Snow CC, Hoover VL (2004) Research on competitive dynamics: recent accomplishments and future challenges. J Manag 30:779–804
Lazzarini SG, Chaddad FR, Cook ML (2001) Integrating supply chain and network analyses: the study of netchains. J Chain Netw Sci 1(1):7–22
Malassis L (1969) La structure et l'èvolution du complexe agroindustiel d'aprèsla comptabilité nationale francoise. Economie et société III(9):1667–1687
Marsden T, Banks J, Britow G (2000) Food supply chain approaches: exploring their role in rural development. Sociol Rural 40(4):424–438
Marshall A, Marshall MP (1920) The economics of industry. Macmillan and Co, London
McKnight DH, Cummings LL, Chervany NL (1998) Initial trust formation in new organizational relationships. Acad Manag Rev 23(3):473–490
Menapace L, Moschini G (2012) Quality certification by geographical indications, trademarks and firm reputation. Eur Rev Agric Econ 39(4):539–566
Menard C (2004) The economics of hybrid organizations. J Inst Theor Econ 160(3):345–376
Nelson P (1970) Information and consumer behavior. J Polit Econ 78(2):311–329
Oliver C (1990) Determinants of inter-organizational relationships: integration and future directions. Acad Manag Rev 15:241–265
Oliver A, Ebers M (1998) Networking network studies: an analysis of conceptual configurations in the study of inter-organizational relationships. Organ Stud 19:549–583
Olson M (1965) The logic of collective action, public goods and the theory of groups. Harvard University Press, Cambridge
Ortmann GF, King RP (2007) Agricultural cooperatives I: history, theory and problems. Agrekon 46(1):18–46
Ostrom E (1990) Governing the commons. The evolutions of institutions for collective actions. Cambridge University Press, Boston
Ponte S (2007) Governance in the value chain for South African wine. Danish Institute for International Studies, Tralac WP Series N. 9/2007.
Ponte S, Gibbon P (2006) Quality standards, conventions and the governance of GVC. Econ Soc 34(1):1–31
Ponte S, Sturgeon T (2014) Explaining governance in global value chains: a modular theory-building effort. Rev Int Polit Econ 21(1):195–223
Porter ME (1998) Cluster and the new economics of competition. Harvard Business Review. November-December 1998.
Pulina P (2010) Autorità, responsabilità e funzioni della distribuzione alimentare moderna. Proceeedings of the LVI Convegno di Studi SIDEA Cambiamenti nel sistema alimentare: nuovi problemi, strategie, politiche, Piacenza, 16-19 settembre 2009. Franco Angeli, Milan
Putnam RD, Leonardi R, Nanetti RY (1994) Making democracy work: civic traditions in modern Italy. Princeton University Press, Princeton
Renting H, Marsden T, Banks J (2003) Understanding alternative food networks: exploring the role of short food supply chains in rural development. Environ Plann A 35(3):393–412
Russo C (2013) Modelli comportamentali dei consumatori e strategie di pricing della GDO. Implicazioni per le filiere agroalimentari. Rivista di Economia Agroalimentare XV(1):145–156
Schmitz H (1995) Collective efficiency: growth path for small-scale industry. J Dev Stud 31(4):529–566
Sckokai P, Soregaroli C, Moro D (2013) Estimating market power by retailers in a dynamic framework: the Italian PDO cheese market. J Agric Econ 64(1):33–53
Sexton RJ (2013) Market power, misconceptions, and modern agricultural markets. Am J Agric Econ 95(2):209–219
Teece D (1992) Competition, cooperation and innovation: organizational arrangements for regimes of rapid technological progress. J Econ Behav Organ 18:1–25
Tirole J (1996) A theory of collective reputation (with applications to the persistence of corruption and firm reputation). Rev Econ Stud 63(1):1–22
Traill B (1996) Globalization in the food industry? Structural changes in the European food industries., Discussion Paper Series
Yu J, Bouamra-Mechemache Z (2015) Production standards, competition and vertical relationship. Eur Rev Agric Econ 443(1):79–111
Zago A (2015) La réputation collective sur les marchés agricoles. Economie Rurale 345(1):29–51