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Strengthening Farmers' Bargaining Power in the New CAP

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ABSTRACT

The food supply chain plays a substantial role in the European economy. Agricultural markets are highly interdependent and competition at different stages of the supply chain matters for the overall functioning of the entire food sector. Welfare and distributional implications of competition at any stage of the food supply chain concern several 'weak subjects' such as small farmers and consumers who negotiate with "strong subjects" operating in more concentrated (industrial and retailing) sectors. In order to balance power across the EU agro-food supply chain and achieve a more sustainable distribution of value-added, the main instruments featuring the new paradigm of market organisation proposed by the CAP reform are Producer Organisation, Association Producer Organisation and Inter-Branch Organisation. We employ a simple bargaining model aimed to identify the determinants of the bargaining power in the food supply chain; the model is used to assess the capability of POs to strengthen farmers' bargaining power. The results show that, under certain conditions, the joint selling and production planning can be effective tools for rebalancing power in the agro-food system. We also concluded that requiring a minimum size for POs may improve their effectiveness. Such requirement should be calibrated on the structure of the downstream (upstream) relevant market: more consolidated buyer (seller) industries call for larger POs.

Keyword: *Producer Organisation; CAP reform; competition; bargaining power; food supply chain*

1. Introduction

The food supply chain, which plays a substantial role in the European economy connecting sectors such as agricultural, food processing industry and distribution that together make more than 5% of European value-added and 7% of employment, is evolving rapidly (EC, 2015). Changes in the organization of international trade, technology, and society's needs are triggering a deep restructuring of the agro-food supply chain which increasingly leads to a complex series of inter-related markets (through coordination, integration and contracts). Furthermore, competition is one of the major issues in agro-food supply chains. Agricultural markets are highly interdependent and competition at different stages of the supply chain matters for the overall functioning of the entire food sector. Welfare and distributional implications of competition at any stage of the food supply chain concern several 'weak subjects' such as small farmers and consumers who negotiate with "strong subjects" operating in more concentrated (industrial and retailing) sectors.

In order to balance power across the EU agro-food supply chain and achieve a more sustainable distribution of value-added, the main instruments featuring the new paradigm of market organisation proposed by the 2013 CAP reform are Producer Organisation (PO), Association Producer Organisation (APO) e Inter-Branch Organisation (IBO).

The aim of this analysis is to assess to what extent the new measures for the single CMO introduced by the last CAP reform may improve functioning of the EU food value chain and strengthen the bargaining power of farmers. Specifically, we focus on the POs' capacity in exploiting their functions and rebalancing the bargaining power along the supply chain. We employ a simple bargaining model aimed to identify the determinants of the bargaining power in the food supply chain; the model is used to assess the capability of POs to strengthen farmers' bargaining power.

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2. The Methodology

Balancing power across the agro-food supply chain is a key concern in modern agricultural policy. The definition of power is a key issue in this field. The literature defines several kinds of powers (e.g.: market power and bargaining power) and the choice of the most fitting definition is a critical modelling choice and has strong policy and welfare implications. While market power is defined as "The ability of a firm (or group of firms) to raise and maintain price above the level that would prevail under competition" (Perloff et al. 2007), bargaining power is referred as "the power to obtain a concession from another party by threatening to impose a cost, or withdraw a benefit, if the party does not grant the concession." (Kirkwood 2005). Unlike market power theory, the emphasis of the definition is on a specific negotiation among certain parties, disregarding the outcome at industry level. Since bargaining models are more effective in describing the complexity of the food system compared to market power models, we employ a simple bargaining model aimed to identify the determinants of the bargaining power in the food supply chain; the model is used to assess the capability of POs to strengthen farmers' bargaining power.

Consider a buyer and a seller negotiating about a trade opportunity. The buyer acts as middleman between the supplier and the consumers. He buys a product X from the supplier and sells it to the consumer. The negotiation is successful if buyer and seller agree on the quantity supplied, the wholesale price and all other contract terms (lump-sum transfers such as trade spending, etc.). If the negotiation is successful a contract is written, trade happens and parties share the total gain from trade (TGT) according to the rules agreed upon in the contract. If the negotiation fails, trade does not happen and parties gain the profits from the next best available alternatives (the so-called disagreement payoffs or outside option profits).

Figure 1: Bilateral, zero-sum bargaining.

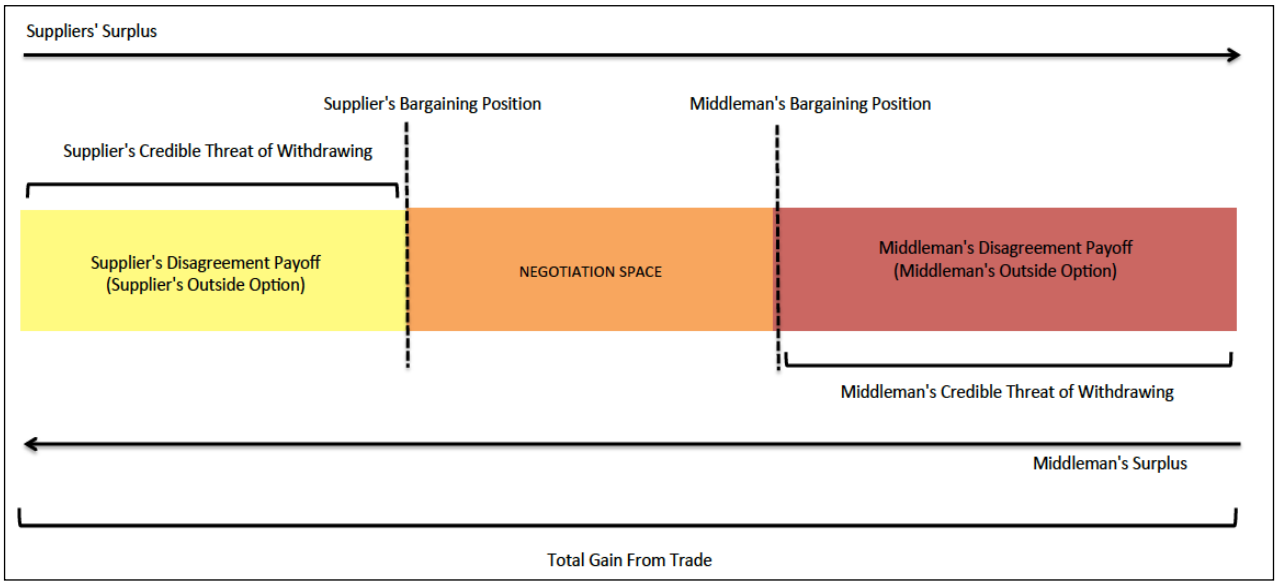

Figure 1 summarizes the key elements of a simple bilateral bargaining[1]. In theory, the TGT can be broken down into three areas: i) The supplier's disagreement payoff (yellow area in Figure 1). This area is equal to the surplus that the supplier would receive from the next best alternative if the transaction fails. Clearly, if the middleman offers a share of TGT that is smaller than the disagreement payoff, the supplier can credibly threat to withdraw from the trade. ii) The middleman's disagreement payoff (red area in Figure 1) is his/her surplus from the next best outside option. The middleman can credibly threat to fail any negotiation resulting in a lower share of TGT than the disagreement payoff; iii) The difference between the TGT and the aggregate disagreement payoff (if positive) is the negotiation space (orange area in Figure 1). The boundaries between the disagreement payoff areas and the negotiation space are the agents' bargaining positions.

[1] In our example, the middleman and the supplier bargain over the total gain from trade (TGT), using a lump-sum transfer. Assuming a zero-sum game greatly simplifies the example.

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Any point in the negotiation space is a feasible negotiation outcome because no agent can credibly threat the other to fail the trade. The specific outcome within the negotiation space depends on the relative magnitude of negotiation power defined as the ability to impose a negotiation outcome that is as close as possible to the most desired point in the negotiation space. It depends on the ability of imposing negotiation rules, negotiation skills, patience, technical constraints, risk attitudes and information. If the middleman has a strong negotiation power compared to the supplier, then the outcome transfer is closer to the supplier's bargaining position than to the middleman's one. Vice versa, if the middleman is relatively weak, the outcome is close to his/her position.

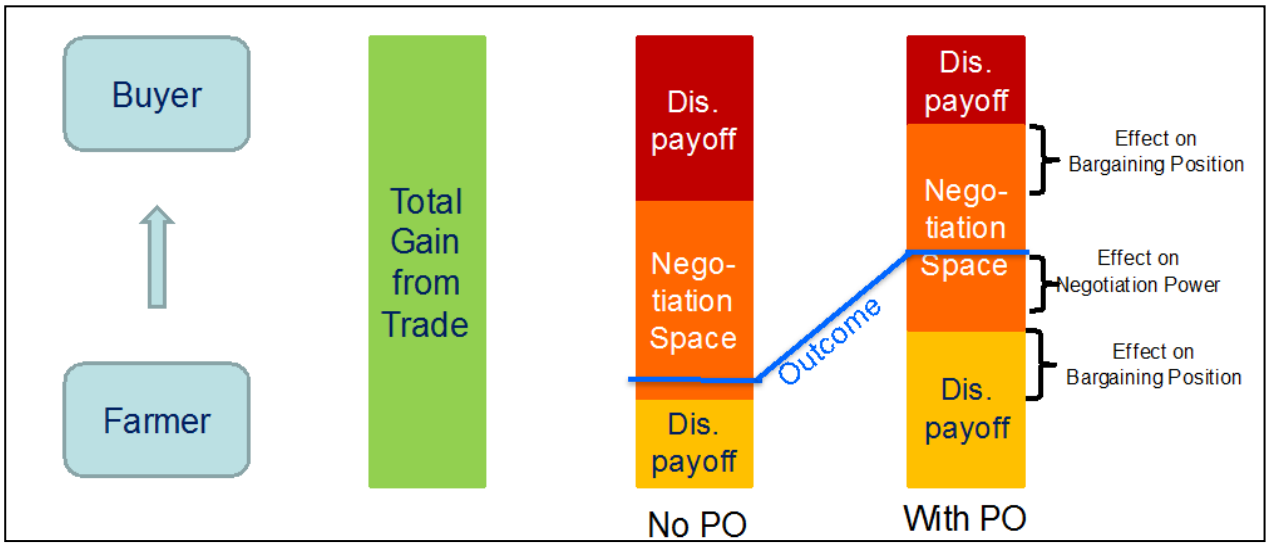
3. Results

Joint selling is a key activity of POs. Here we illustrate the intuition of the model[2]. Consider a simple model of sequential bargaining among multiple agents. Each supplier and each buyer pick a random counterpart and start a bilateral negotiation. If the negotiation fails, they move on and negotiate with another partner. This model can be used to describe the horizontal integration process. We represent joint selling as a reduction in the number of suppliers in the market and we propose a simplified version of the Inderst-Wey model (2007)

The theoretical model identified the basic economic mechanism allowing POs to rebalance bargaining power along the food supply chain. Figure 2 summarizes the key findings. Assume that farmers are bargaining with a buyer over the value of a trade. The PO can improve the final outcome in three ways:

- **Effects on negotiation power**. The PO can improve farmers' ability to negotiate with the buyer (see Box 4). A PO can hire professional negotiators, has better access to legal services, and more in general has access to human, financial and technical resources that are unaffordable for the single farmers. Such access can improve the ability to counter buyer power.
- **Effects on buyer's bargaining position**. PO's horizontal integration can reduce buyer's trade options, worsening its bargaining position. The reduction of the buyer's disagreement payoff – holding everything else constant – increases the negotiation space, giving farmers the opportunity of appropriating of more value.
- **Effects on farmers' bargaining position**. Associated farmers may have access to alternative marketing channels that are unavailable to individual firms. This implies that a PO can increase farmers' disagreement payoff. If this is the case, the negotiation space is reduced to the buyer's detriment and farmers can keep a higher share of the TGT.

Figure 2. Rebalancing bargaining power: the role of PO



However, small POs might be unable to improve farmers' bargaining position and significantly alter the negotiation outcome and the effectiveness of a PO in improving farmers' bargaining position depends on the concentration of the downstream market. The more the downstream sector is consolidated, the larger the size of the PO should be.

[2] The formal derivation and the assumptions of the model are in Sorrentino et al., 2016.

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4. Conclusion

The food supply chain, which plays a substantial role in the European economy, the food supply chain is a complex series of inter-related markets (with increasing forms of coordination, integration and contracts). Welfare implications of competition at any stage of the food supply chain concern several 'weak subjects' such as small farmers and consumers, and for that reason are of specific interests for policy-makers. The recent 2013 reform opted for a more decentralized approach, and now private entities such as PO, APOs or IBOs are assuming an increasing role in the governance of the agricultural markets.

A simple bargaining model has been employed in order to assess on the POs' capacity in exploiting their functions and rebalancing the bargaining power along the supply chain.

The results show that, under certain conditions, the joint selling and production planning can be effective tools for rebalancing power in the agro-food system. We also concluded that requiring a minimum size for POs may improve their effectiveness. Such requirement should be calibrated on the structure of the downstream (upstream) relevant market: more consolidated buyer (seller) industries call for larger POs. Furthermore, promoting the diversification of the POs' market channels is a key success factor. This objective can be pursued even allowing multi-sector POs.

Reference

Allain, M. L., Chambolle, C. (2005), Loss-leaders banning laws as vertical restraints, Journal of Agricultural & Food Industrial Organization, 3(1).

European Commission (2015), You are part of the food chain. Key facts and figures on the food supply chain in the European Union, EU Agricultural Markets Briefs, No 4, June 2015.

Inderst, R., Wey, C. (2007), Buyer power and supplier incentives, European Economic Review, 51(3), 647-667.

Perloff, J. M., Karp, L. S., Golan, A. (2007), Estimating market power and strategies, Cambridge University Press.

Sorrentino A., Russo C., Cacchiarelli, L. (2016), Research for agri committee. Food Value Chain in the EU - How to improve it and strengthen the bargaining power of farmers. In structural change in EU farming: how can the CAP support a 21st century European model of agriculture? European Parliament, pp. 197-277.

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