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Buying groups formation : what effects on competition in the retail industry ?

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Each year, commercial negociations highlight the tensions between retailers and their suppliers, and public authorities are regularly called upon to intervene to balance the relationship. In this context, buying groups - which allow several large competing retailers to negotiate jointly with their suppliers - are likely to strengthen retailers' buyer power. France experienced two waves of buying groups formation in 2014 and in 2018 and the law was changed to allow the French Competition Authority - the Autorité de la concurrence (ADLC) - to regulate the formation of such alliances. This policy brief proposes a framework to analyse the effects of the buying groups on the sector as a whole. After a brief assessment of the economic forces at play based on a review of the literature, we discuss the results of two studies conducted by the authors of this note. The first one adopts an empirical approach to study the effects of buying groups formation in 2014 in France in the bottled water industry. It shows that the introduction of buying groups modified profit sharing at the expense of suppliers but also led to a decline in prices which benefited consumers. The second study discusses the efficiency of excluding store brands from the scope of buying groups - as advocated by the Competition Authority - to protect small suppliers and maintain product variety.

- Buying groups - which allow retailers to unite in their negotiations with suppliers - have become a major issue in the context of competition regulation.
- An empirical analysis focusing on the effects of the formation of buying groups in 2014 on the bottled water sector finds that retailer prices paid by consumers are reduced by roughly 7 % for national brands following the introduction of buying groups. However, this price decline was accompanied by a substantial decrease in suppliers' profit as well as in the aggregate value added of the industry.
- A theoretical study also highlights the adverse effects of buying groups on product variety. The study shows that excluding store brands - as recommended by the French Competition Authority - is not sufficient to protect suppliers' margin.

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In France, the tensions arising during commercial negotiations between large retailers and their suppliers are given close attention by public authorities for whom the litigation may be complex to manage. On the one hand, large retailers portray themselves as defenders of consumers' interests assuming that greater buyer power would result in lower retail prices. On the other hand, representatives of the agri-food industry argue that retailers' buyer power jeopardizes the sector.

In fact, there are strong disparities in the balance of power between suppliers and retailers. The mass retail industry is dominated by six large companies accounting for 90% of the sectors' revenues from sales. These companies get their supply from about 15,000 firms which display a great level of heterogeneity regarding their size. Most of these supplying firms are SMEs but a handful of large corporations with international footprint account for 40% of these firms' total revenues.

Large-scale creations or extensions of buying groups have recently affected the balance of the commercial relation between suppliers and retailers. Buying groups are alliances gathering several retailers and designed to negotiate supply contracts with suppliers. After the group formation, its members act as a single agent on the wholesale market - which reinforces the concentration faced by their suppliers - but still compete for the selling of goods to final consumers.

Between September and December 2014, three major alliance agreements were signed in France (Système U-Auchan, Intermarché-Casino et Carrefour-Cora). In 2018, a second wave of international agreement settlement involving French retailers took place (Carrefour-Système U, Carrefour-Tesco, and Horizon, which gathers Casino, Auchan, Dia, Metro and Schiever). The two waves of agreement settlements differ in several aspects. The buying groups created in 2014 gathered only French retailers and their scope was limited to products from private labels which are generally produced by large suppliers. From the standpoint of the French Competition Authority, the 2018 alliances differ « from those made in 2015 by their larger scope involving an international dimension, and because they include not only national-brand goods (*produits à marque nationale*, (MDF*) [1]) but also store-brand products (*produits à marque de distributeurs*, (MDD*) [2]) »

These cooperation agreements raise important competition issues and are increasingly monitored by the European and French authorities. Unlike mergers, buying groups formation does not require ex-ante approval from the Competition Authority and therefore is only subject to ex-post regulation.

In France, the ADLC stated in a 2015 Advisory Opinion that buying groups created in 2014 were unlikely to hinder competition - especially because their scope was limited to private-label products, which presumably limits the risks of economic dependence. Since then, the regulator's supervision tools to oversight buying groups have been strengthened. The so-called Loi Macron 2015-990 makes it compulsory to notify the ADLC - at least two months in advance - of a project to form a buyer group. The October 30th 2018 EGALIM law allows the ADLC to require modifications to the term of the buying group agreement if violations of competition rules are identified. The ADLC can also take precautionary measures and freeze all or part of the project if it identifies agreement terms which substantially undermine competition. In accordance with its new regulative powers, the ADLC required in its recent decisions - concerning the Horizon (Decision 20-D-13 of October 22, 2020) and Carrefour-Tesco (Decision 20-D-22 of December 17, 2020) buying groups - that retailers exclude from the scope of their joint purchases some type of products.

At the European level, buying group formations - similarly to every horizontal agreement - fall under the jurisdiction of Article 101 of the Treaty on the Functioning of the European Union (TFEU). Firms participating to a buying group formation are required to self-evaluate whether the project meets the conditions laid down by Article 1 paragraph 3, which states that the alliance can be approved if it « contributes to improving the production or distribution of goods or to promoting technical or economic progress, while granting consumers a fair share of the resulting benefit [3] ». In 2019, the DGComp of the European Commission initiated an investigation on the commercial strategy of large retailers and the conditions they impose when they form buying groups [4]. Their impact on agricultural suppliers is also monitored [5].

The following section of this note presents different insights from the economic literature on the economic costs and benefits of such alliances. Results of two recent studies conducted by the authors of the note are then presented. On the one hand, Molina (2021) empirical analysis evaluates the impact of the buying group formations in 2014 on retail price in France and on profit sharing between market agents. On the other hand, Allain, Avignon et Chambolle (2020) call into question the efficiency of

1. Words followed by an asterisk are defined in the glossary p.6
2. See ADLC's website : https://www.autoritedelaconcurrence.fr/en/communiques-de-presse/16-july-2018-joint-purchasing-agreements-food-retail-market-sector

3. See the Guidelines on the applicability of Article 101 of the Treaty on the FTEU to horizontal co-operation agreements : https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011XC0114(04)&from=FR See also the Guidelines on Vertical Restraints : https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52010SC0411&from=FR
4. See Reuters https://www.reuters.com/article/us-eu-retail-france-antitrust/eu-antitrust-inspectors-investigate-frances-casino-intermarche-idUSKCN1SS0TC
5. See for instance the report from the DG Agri of the European Commission https://publications.jrc.ec.europa.eu/repository/handle/JRC120271

measures limiting the scope of buying groups to protect small suppliers.

Buying groups in the economic literature

For a long time, buying groups have benefited from the benevolence of the public authorities towards retailers' buyer power, which is believed to benefit consumers by reducing retail prices. Thus, in the Opinion 15-1-06 (paragraph 34) the ADLC states that :

> « Unlike the market power of suppliers - the strengthening of which is not always beneficial - buyer power may foster competition through a countervailing power mechanism giving suppliers incentives to reduce their margin and their production costs. These effects of buyer power can then spill over into the downstream market and positively affect final consumers if the intensity of the competition in this downstream market is high. »

The idea of « countervailing power », according to which buyer power enables retailers to reduce the margins of suppliers and to pass on this benefit to consumers via a reduction in retail prices, was initially coined by Galbraith (1952). However, recent developments in the theory of Industrial Organizations have shown that buying groups allow retailers to obtain lower prices - and thereby to offer lower retail prices - only under very restrictive conditions.

Forming buying groups does not always enable retailers to obtain price discounts from suppliers If the buying group is formed by retailers who operates on the same market, a threat of collective delisting directly weakens the supplier's bargaining power. Furthermore, Caprice et Rey (2015) show that centralizing the listing decision increases retailers' bargaining power towards their suppliers by mitigating the costs of failed negotiations (outside option). Indeed, when a retailer delists a product, the other members of the buying groups make the same decision.

Nevertheless, building alliances to make joint purchases does not always result in successful price bargaining [6]. As shown by Chambolle, Muniesa et Ravon (2007), buying groups can also reduce suppliers' ability to price discriminate between retailers since individual purchasing conditions are common knowledge among the members of the group. If one member of the group obtains a price discount through a secret contract, the buying group agreement ensures to every member of the alliance the same purchasing price. This reduces retailers' incentives to ask for price discounts and also makes each price discount more costly for suppliers. Hence, buying group formation may result in higher wholesale prices [7].

Price discounts obtained by buying groups do not necessarily result in lower retail prices This only happens if (1) the competition between retailers is sufficiently intense in the downstream market (voir Gaudin, 2018), and (2) if prices are linear* (see Ungern-Sternberg, 1996 ; Iozzi et Valletti, 2014) However, it is clear that the distribution sector has reached high levels of concentration in Europe (see Barros, Brito et Lucena, 2006), which may impede the first condition. Moreover, several studies have highlighted the pro-collusive aspects of buying group. While the concentration of demand may make collusion between suppliers more difficult (Rotemberg et Saloner, 1989) buying groups may, on the other hand, favour collusion on the downstream market (Doyle et Han, 2014 ; Piccolo et Miklós-Thal, 2012 ; Normann, Rosch et Schultz, 2015). Additionally, the existence of fixed premia - due to listing or other measures - provide evidence of the nonlinearity of pricing (See for instance Villas-Boas, 2007), which goes against the second condition.

Buying groups formation may reduce the variety of products offered to consumers The benefit of joint negotiation by retailers lies mainly in the competition of suppliers for access to the market, which may lead to a reduction in product variety. Inderst et Shaffer (2007) show that retailers operating in several markets - where consumer preferences differ - obtain better prices if they commit to (de)listing the same products. This mechanism leads to a reduction in variety without any price reduction for consumers [8].

Empirical results about the impact of buying groups Empirical analyses of buying groups in the literature are scarcer than theoretical ones. Lewis et Pflum (2015) show that hospitals part of a buying group have a higher « bargaining ability* » than independent hospitals. This may also explain why the former category of hospitals manages to obtain more advantageous prices in the bargaining with health insurance companies. This empirical

6. Chipty et Snyder (1999) for instance show that in a situation where a buying group faces a monopolist supplier, the group obtains advantageous conditions only if the additional profit brought to the supplier by the first retailer is greater than the additional profit brought by a second retailer. In the absence of competition between retailers, this condition is similar to diminishing returns for the supplier

7. The evaluation of LME law provides empirical support to these results (see Allain, Chambolle et Turolla, 2016) - LME law restoring suppliers' ability to practice price discrimination resulted in a 2 to 3 % decrease in retail prices.

8. Sorensen (2003) and Ellison et Snyder (2010) give empirical evidence in favour of this theory. Jeon et Menicucci (2019) show that buying groups are profitable only if they can make a commitment about this common listing strategy.

study also highlights a new channel through which buying groups would allow their members to obtain discounts from their suppliers : they may directly affect their members' bargaining ability on top of improving outside options and gains from the status quo [9]. Using a structural model of bargaining between hospitals and medical furniture suppliers, Grennan (2013) also concludes that in the absence of effects on bargaining power, buying groups do not enable their members to obtain more attractive prices.

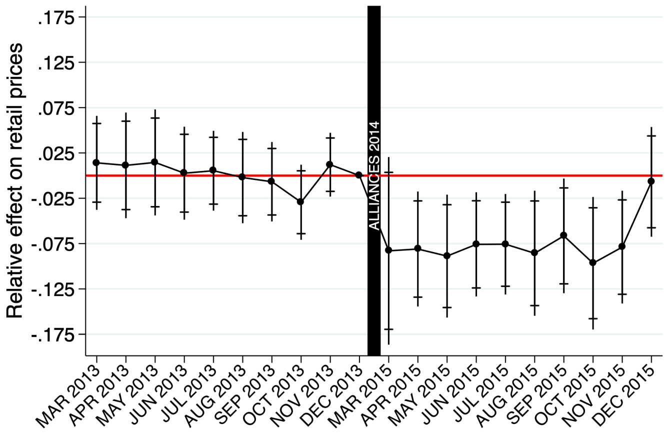
The effect of buying groups on retailers' buyer power and on retail prices

In our first study, we assess the effect of buying groups formation in France in 2014 on retail prices and profit sharing in the bottled-water industry. This industry is dominated by three suppliers (Nestlé, Danone and Groupe Alma) and large retailers account for more than 80% of the industry's sales. We use the 2013 and 2015 waves of the *Kantar WorldPanel* dataset, which tracks the food purchases for a representative panel of French households.

We start by conducting a descriptive analysis of the change in retail prices before and after the formation of buying groups. Figure 1 displays the evolution of the price difference between national-brand goods (MDF) - which prices were negotiated through the buying groups - and store-brand goods (MDD) - which were excluded from the scope of the buying groups - for retailers who joined a buying group [10]. Over the entire period prior to the formation of the buying groups, this price difference is stable : The average price of national-brand goods sold by these retailers follow the same trend as that of store-brand goods prices in 2013. However, the figure shows a significant reduction in this difference following the buying groups formation - the national-brand goods average price fell by 7.12 % compared to the store-brand goods average price following the buying groups formation. These results highlight a strong correlation between buying groups formation in 2014 and the decrease in retail prices of jointly negotiated goods.

A structural supply and demand model is then developed to measure the causal impact of buying groups on retail prices and the different sources of retailers' buyer power [11]. The supply-side is based on a model of successive oligopolies in which producers and retailers interact in a

Figure 1 – Evolution of the difference in the log of retail prices between national-brand goods and store-brand goods sold by retailers who have formed a buying group



two-stage game. In the first stage, producers and retailers negotiate to determine the wholesale unit price of each product. Negotiations are bilateral and simultaneous, so wholesale prices are not observed by competitors. Then, retailers compete on price in the downstream market.

The structural analysis makes it possible to quantify the effect of the formation of a buying group on the economic forces at play during the negotiation process.

First of all, the buying group is a compulsory step for products listing. Each supplier is therefore threatened with being delisted from all members if the negotiation fails. By deteriorating the suppliers' *status quo*, this threat improves the bargaining power of the retailers who are members of the buying group.

In addition, by negotiating a common discount for all its members, the buying group prevents price-discrimination from suppliers. Since it must apply to all members, any concession is more costly for a supplier. *Conversely*, the benefit from a discount becomes smaller for members of the buying group as a shared reduction in the cost of all members of the group increases the intensity of competition on the retail market. Thus, retailers have weaker incentives to obtain concessions from suppliers - who are in turn less willing to provide them - thereby altering the bargaining power of the buying group's members in favour of the suppliers.

Finally, the formation of a buying group is likely to alter suppliers and retailers' bargaining abilities, reinforcing retailers' ability to obtain better purchasing conditions [12].

The results of the structural model estimation indicate that the share of total profit captured by retailers increased from 68.9 % before the formation of the buying groups (2013) to 83.8 % after the formation of the groups

9. Using a reduced form model, Dubois, Lefouili et Straub (2021) shed light on the influence buying groups can have in the pharmaceutical industry on price reduction by improving their members' bargaining abilities.

10. Each point of the figure measures the change in the difference in (log) prices compared to December 2013. The vertical lines represent the 90% and 95% confidence intervals

11. The demand-side is represented by a multinomial logit choice model that models consumer's choices between different bottled-water brands (Evian or Perrier for instance) sold by every retailer

12. Molina (2021) discusses this effect relying on cooperative game theory - See notably Kalai (1977).

(2015)[13].

In order to distinguish between the formation of the buying groups and other changes in the market environment, we use the structural model estimates to simulate what the retail and wholesale prices would have been without the buying groups. The results of this simulation suggest that - for retailers who are part of a buying group - retail prices of national-brand goods observed in 2015 are 7.1 % lower than what they would have been without the buying groups[14]. Moreover, buying group formation reduced suppliers' margin by 54.1 % and the industry's total profit by 3.4 %.

These results thus highlight the existence of a countervailing power mechanism that reduces both wholesale and retail prices. The 2014 buying groups formation benefited consumers but reduced the profit of suppliers and the value generated by the vertical chain. Further simulations show that among the three economic forces involved, the increase in retailers' bargaining power plays a dominant role in creating buyer power and profitability for retailers.

The effect of buying groups on product variety and small suppliers

Although attentive to the positive impact of buying groups on consumer purchasing power, the ADLC has expressed concern about the extension of their scope to store-brand goods. It raises two sources of concern. On the one hand, the erosion of margins could weaken store-brand goods retailers, mainly SMEs and micro enterprises, and harm supply in the medium term. On the other hand, the ADLC fears a reduction in the variety of products sold by the various retailers. Indeed, retailers define jointly with their suppliers the products specification that best suit their customers, and the issuing of joint calls for tender would homogenise this offer. In order to prevent these risks, the ADLC recently made it compulsory for retailers to commit to excluding store-brand goods from the scope of buying groups for products whose sector is in difficulty. In our second study, we analyse the impact of these commitments on suppliers of store-brand goods and on product variety.

To this end, we develop a model that describes the market equilibrium under three different buying regimes : (i) independent retailers (no buying group) (ii) retailers cooperating only for the purchasing of national-brand goods (partial buying group) or (iii) for the purchasing of national-brand and store-brand goods (full buying group). The theoretical framework aims to capture the key features of the market while remaining as simple as possible. The model thus considers an economy with two retailers operating on separate markets (for instance two distinct geographic areas), each of which can offer at most two goods. On the upstream market, one large multi-product firm supplies two national-brand goods to the retailers. Each retailer may also decide to buy goods from a SME specializing in the production of its own store-brand good. Each SME can also become a supplier of the store-brand good for the other retailer, at the cost of adapting to the specifications of this new customer. During the negotiation process with the suppliers, retailers can take advantage of the excess variety of products made available by suppliers relative to their distribution capacity on the downstream market to increase the intensity of the competition between suppliers and thereby obtain the best possible prices.

In scenario (i) where there is no buying group, each retailer selects the most attractive product assortment, i.e. one that creates the most value in its market. A retailer's bargaining power is all the greater when the product he does not select remains attractive (in terms of customers' preferences and of price). As retailers operates in different markets, they do not necessarily have the same optimal product assortment.

In scenarios (ii) and (iii), the formation of a buying group that compels retailers to offer the same product assortment may lead to at least one of the retailers not offering the assortment preferred by its customers, resulting in a reduction of the aggregate value created by retailers while being profitable for them. Indeed, by committing themselves to buying a joint product assortment, retailers can intensify the competition between suppliers and thereby strengthen their buyer power.

In scenario (iii), in which the purchasing scope of the buying groups includes both national-brand and store-brand goods, only one of the two SMEs can be chosen to supply both retailers with store-brand goods, the other being excluded from the market. This direct competition results in a drop in profit, even for the selected supplier. In this set-up, the buying group causes a loss of value due to the cost for the SME of adapting to the new customer, but remains profitable for the retailers who benefit from the increased competition between SMEs. This result therefore provides a theoretical basis for the fears expressed by the ADLC : when the buying group covers all types of products, store-brand goods suppliers are negatively affected.

Nonetheless, the analysis of scenario (ii) shows that excluding store-brand goods from the scope of buying groups does not always protect SMEs. In particular, when the optimal product assortment differs in the two markets, the creation of a buying group restricted to national-brand goods may reduce the profit of store-brand goods sup-

13. The structural model predicts a weakly positive effect of the groups, of roughly +0.14 %, on the price of store-brand goods

14. The descriptive analysis of retail prices supports these results (see Figure 1).

pliers or even lead to their exclusion. Indeed, the supplier of national-brand goods must decide whether to sell a unique good or to impose his two goods to the retailers. When the supplier sells only one good, it is unsuitable for the customers of one of the markets, which encourages the national-brand goods supplier to impose his two products. To do this, he has to make concessions on his prices so that the two store-brand goods suppliers are forced out of the market. In this case, the buying group loses value through reduced consumer satisfaction in at least one of the markets, but remains profitable for the retailers who benefit from the increased competition between suppliers of national-brand goods and store-brand goods. Whatever the outcome of this competition, the store-brand goods suppliers, although outside the scope of the buying group, are affected : either they are excluded or they are forced to lower their prices. The authors' modelling choice deliberately neutralises any effect on prices in order to better highlight the effects on product variety. As a consequence, consumers never benefit from the formation of a buying group, they can only suffer as a result of the reduction in product variety. Of course, in order to assess the total effect of the formation of buying groups, these potentially adverse effects on product variety and on suppliers must be compared with the potentially beneficial effects on consumer surplus via price effects that are not modelled here.

Conclusion

While the economic literature highlights relatively restrictive conditions for the formation of a buying group to lead to a decrease in retail prices, we show that the buying groups formed in 2014 in France have indeed led to a decrease in retail prices in the bottled water sector. However, this analysis is limited to one category of goods and highlights only short-term effects. In the longer term, however, a second study alerts us to the negative effects of buying groups on product variety. Our analysis shows that although store-brand goods producers would lose out if they were included in the scope of the buying groups' agreement, excluding them from this scope is not enough to protect them. Therefore, improving buying groups regulation remains a critical challenge in order to preserve sound and proper competition in the agri-food industry.

Glossary

Bargaining ability : an exogenous parameter in models of bargaining - in the form of a weighting - representing a set of the agent's intrinsic attributes.

Store-brand : a brand created and owned by a retailer. Store-brand goods manufacturer are independent manufacturers producing on behalf of the retailer and rather rarely retailer's manufacturing subsidiary.

National-brand : a brand created and owned by a manufacturer and which range of products are manufactured and sold to retailers.

Listing premium : a payment made by a manufacturer to a retailer to have its products distributed (or listed) by the retailer in its stores.

Two-part tariff : a pricing system wherein tariffs are composed of a lump-sum fee and a per-unit fee.

Linear pricing : a pricing system wherein consumers pay a per-unit fee (unit price * quantity)

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