

PARETO

Producer And RETailer markets Organization

Research discipline(s) and areas

Economics, Industrial Organization (IO)

French team

Institution	Surname	First Name	Current Position ¹	Role in the project ²	Time dedicated to the project (months)
Paris Saclay Applied Economics (PSAE)	CHAMBOLLE	Claire	DR, INRAE	Coordinator	18 months
	CERLES	Sébastien	PhD	Participant	12 months
	MOLINA	Hugo	CR, INRAE	Participant	18 months
	PAROISSIEN	Emmanuel	CR, INRAE	Participant	9 months
	N.N			Postdoctoral position to be hired	12 months
	N.N			CDD IR to be hired	12 months
SMART	AVIGNON	Rémi	CR, INRAE	Participant	11 months
	TUROLLA	Stéphane	CR, INRAE	Participant	8 months
TSE-R	BONNET	Céline	DR, INRAE	Participant	8 months
	TRANCHARD	Maxime	PhD	Participant	6 months
	N.N			CDD IR to be hired	12 months
CREST	ALLAIN	Marie-Laure	DR, CNRS	Associate participant	9 months
Caen University	CHRISTIN	Clémence	MCF	Associate participant	9 months
Ecole des Mines	RICKERT	Dennis	Assistant Professor	Associate participant	8 months
CREST	LINNEMER	Laurent	Professor	External Contributor	
Ministry of economics and Finance	PERROT	Anne	Inspectrice Générale des Finances	External Contributor	
TSE-R	REY	Patrick	Professor	External Contributor	
Autorité de la Concurrence	VERGE	Thibaud	Vice-Président	External Contributor	

German team

Institution	Surname	First name	Current position	Role and responsibilities within the project	Time dedicated to the project (months)
DICE	STIEBALE	Joel	Professor	Federführender Antragsteller	12 months
DICE	YONTCHEVA	Biliana	Assistant Professor	Federführender Antragsteller	12 months
DICE	DOPPER	Hendrik	PhD student (disputation exp. 09/2023)	Mitverantwortliche	6 months
DICE	HEISS	Florian	Professor	Mitverantwortliche	6 months

¹ MCF (maître de conférences), CR (Chargé de recherche), DR (Directeur de recherche).

² The precise role of each participant in the project is detailed further in the Gantt chart.

DICE	LICHTER	Andreas	Assistant Professor	Mitverantwortliche	6 months
DICE	MARTIN	Simon	Post doc	Mitverantwortliche	6 months
DICE	ROMAHN	André	Assistant Professor	Mitverantwortliche	6 months
DICE	YAN	Yihan	Post doc	Mitverantwortliche	6 months
Universität Freiburg	GAUDIN	Germain	Professor	Mitverantwortliche	6 months
Universität Mannheim	GRIGOLON	Laura	Assistant Professor	Mitverantwortliche	6 months
Universität Mannheim	SCHUTZ	Nicolas	Professor	Mitverantwortliche	6 months
	N.N.			Doctoral researcher to be hired for work with production data	36 months
	N.N.			Doctoral researcher to be hired for work with consumption data	36 months

1. Context, positioning and objectives of the project proposal

1.1. Research objectives and hypotheses

Consumers are currently affected by an unprecedented rise in inflation and this increase has been particularly severe in food and retail markets. Exogenous shocks, such as COVID-19 and armed conflicts, are potential causes of increasing prices, but they may also be driven by specific regulation or the exercise of market power at different levels of the retail chain. Not all countries and product markets are affected equally, which raises questions regarding the source of this heterogeneity in market responses. The goal of this project is to document this process, understand its causes and support evidence-based economic policy. We focus on the role of Producer And RETail market Organization (PARETO) in shaping the economic environment. For this purpose, we will develop novel theories and exploit new, unique cross-country scanner and production datasets covering consumers, producers, and retailers in 17 European countries. The current project aims to push the research frontier of theoretical and empirical work in the field of industrial organization of producer and retail markets.

We divide our project into four work packages (WP). WP1 starts by documenting facts about pricing heterogeneity across countries, producers and retailers, and attempts to identify the consumers who have been affected by inflation most severely. We will estimate how different cost shocks faced by firms, such as changes in energy costs and taxes, translate into producer and consumer prices. Then, we will examine the determinants of this pass-through of costs to prices. Getting a better understanding of the factors determining the degree of price transmission of cost shocks, and their relative importance therein, is crucial for evaluating a wide range of public policies. We will contribute to important public policy debates such as how to fight inflation or how to design regulations to modify consumers' diet.

WP2 deals with producers' and retailers' market power, i.e. their ability to influence market prices and charge markups above their average costs. We will document whether the increase in markups that has been found in the US can also be observed in Europe, how and why it

varies across markets and different levels of the vertical chain. This work package will then analyze how specific economic policies affect firms' market power. Quantifying the evolution of market power and separating its different components is essential for understanding the resulting consequences for consumer welfare. Our evidence on markup differences across space and time will therefore be an important input for policy makers. The identification of relevant factors that drive changes in markups, which is one aim of this work package, is crucial for the design of industrial policy.

WP3 extends existing methods of estimating consumer demand, by accounting for multiple purchases of the same good, as well as complementarities across products. Modeling interdependencies across products is essential in retail markets where consumers often conduct most of their purchases in a single store. This work package analyzes how these relationships affect pricing strategies, the division of profit between retailers and producers, as well as regulatory policies. It addresses a technical challenge of dimensionality, that is how to take into account the substitution patterns for a large number of products. Furthermore, it provides novel empirical frameworks and theoretical contributions to provide insights about the degree of demand interdependencies among food categories and their impact on optimal policy design.

WP4 analyzes how the entry and exit strategies of retailers across formats and product groups have adjusted in recent years. The inflation resilience of households crucially depends on the choice-set of available products and sellers and the ability of consumers to adjust their consumption patterns following a price increase. The entry and exit of products contribute substantially to changes in overall price levels. This package places a particular focus on two market trends: the rise of online retailing and restructuring due to entry of discounters. It seeks to determine how different pricing schemes between retailers and producers, buyer power and changes in the market structure affect the product assortment available to consumers. As market concentration rises, policy-makers will require a sound understanding of interactions between different components of the production and distribution chain. From a technical standpoint, the correct specification of buyer-seller relationships is crucial. This work package addresses this challenge by proposing two extensions to the theoretical literature: a model of endogenous supplier-buyer networks, as well as a model of platforms acting as both gatekeepers and sellers.

1.2. Positioning relative to the state of the art

WP1: The determinants of pass-through

The price response to a variety of cost shocks, including excise taxes, input prices, and exchange rates, also called pass-through, is essential to understand the distributional effects and welfare consequences of a wide range of policies. A rich empirical literature spanning macro- and microeconomics has estimated pass-through and, depending on the detailed market context, has often found evidence of incomplete and asymmetric transmission. Upward

adjustments to positive shocks are more frequent and larger than downward adjustment to negative shocks (Frey and Manera, 2007; Farkas and Yontcheva, 2019; von Cramon-Taubadel and Goodwin, 2021; Loy et al., 2022). Yet, theoretical industrial organization (henceforth IO) models predict that over-transmission is possible under certain market conditions (Stern, 1987; Miller et al., 2017). Bonnet et al. (2013) and Bonnet and Requillart (2013) evaluate the pass-through rate of changes in input costs and taxes. They find that the industry over-shifts cost changes or excise taxes to the consumers. They show that ignoring strategic pricing would lead to an underestimation of the change in consumption by about 15% when firms face an excise tax. The theoretical literature suggests that the shape and the curvature of the demand are key determinants of the pass-through under a variety of market structures (Stern, 1987; Delipalla and Keen, 1992; Anderson et al., 2001; Weyl and Fabinger, 2013; Mrázová and Neary, 2017; Miklós-Thal and Shaffer, 2021). Empirically, Nakamura and Zerom (2010) have demonstrated a negative relationship between the estimated super-elasticity and the pass-through, by implementing empirical IO modeling of the US coffee market. The literature also examined how both vertical and horizontal market structures affect the level of pass-through, through the mark-up adjustments along the supply distribution chain (Aksoy and Riyanto, 2000; Nakamura and Zerom, 2010; Hellerstein and Villas-Boas, 2010). Firms' market power tends to moderate pass-through as shown by Hong and Li (2017) or Genakos and Pagliero (2022). For instance, Genakos and Pagliero (2022) find that pass-through increases from 0.4 in monopoly markets to 1 in markets with four or more competitors and remains constant thereafter. Similarly, collusive behavior lowers the pass-through (Kim and Cotterill, 2008) whereas vertical integration, in contrast, increases pass-through by reducing double marginalization (Hellerstein and Villas-Boas, 2010; Aksoy and Riyanto, 2000; Hong and Li, 2017). Gaudin (2015) shows theoretically that the distribution of bargaining power between producers and retailers, as well as the type of agreement they contract on, are important determinants of the pass-through rate. Bonnet et al. (2013) find empirical evidence that resale price maintenance increases pass-through rates. Finally, Edgeworth (1925) has shown that imperfect substitution among its products could lead a multiproduct firm to impose negative pass-through. This paradox was recently revisited by Armstrong and Vickers (2022). The literature on health or energy examines how an excise tax on a sin product (e.g. cigarettes, alcohol, soda, sugar) or emission costs affect prices (Fabra and Reguant, 2014) or consumption (Dubois et al., 2020). The research analyzing these types of regulation also takes into account how firms react by modifying their product formulation (see Réquillart et al., 2016) or by adopting cleaner technologies (see Ulph, 1997; Requate, 2005), these reactions in turn affect the equilibrium pass-through rates.

WP2: Evolution of market power and its determinants

Recent evidence documents a substantial rise in market power. In a seminal paper, De Loecker et al. (2020) estimate the evolution of markups for US public firms over time. They find that average sales-weighted markups have increased from 20% above marginal costs in the 1980s to a striking 60% above marginal costs in recent years. This is mainly driven by a reallocation of market shares towards high markup firms rather than an increase of markups within firms, except for the upper percentiles of the markup distribution. The estimation of markups in this literature is based on a production approach using data on revenues and costs, under the

assumption of cost minimization. As shown by De Loecker and Warzynski (2012), a firm's markup can be recovered as the ratio of the input-output elasticity of a variable input such as materials or labor, to its revenue share. The input-output elasticity can be estimated using standard techniques from the production function literature (e.g., Akerberg et al. 2015; Olley and Pakes, 1996). As with any empirical approach, this method comes with some challenges. For instance, recent work by Bond et al. (2021) has pointed to identification problems when using data on revenues rather than physical quantities to infer markups from a production approach. A further challenge is that typical financial data does not allow for an explicit treatment of multiple-product firms. These challenges are addressed in two studies within work package 2, where we use detailed data on prices and quantities at the firm-product level for French and German manufacturing firms to estimate production functions in physical units. Methods that allow for an explicit treatment of multi-product firms have been developed, for instance, in De Loecker et al. (2016) and we have employed such methods in previous work (e.g., Stiebale and Vencappa, 2018).

Since separate identification of seller power and market power in inputs is challenging, the previous literature has mostly assumed the absence of buyer power and/or monopsony power. For instance, Yeh et al. (2022) find evidence for the existence of monopsony power and an increasing trend over time in the US under the assumption of competitive markets for intermediate inputs. A small number of studies have used institutional features of specific industries to identify buyer power separately from seller power. For instance, Avignon and Guigue (2022) exploit the existence of a commodity market to estimate the buyer power that French dairy producers possess when purchasing raw milk and the seller power they leverage in the market for dairy products. Recent advances in the literature (e.g., Rubens, 2023) show that separate identification of markups and buyer power are in principle possible without imposing such constraints which makes them applicable to a broader set of industries. We exploit these insights in one of our projects in work package 2.

A small number of studies have analyzed the evolution of market power in industry-specific case studies. For example, Ganapati (2021) analyzes the evolution of markups of a wholesaler. Grieco et al. (2022) study the evolution of market power in the US automobile industry; Miller et al. (2022) focus on the cement industry. All of these studies provide evidence for technological progress that has benefited consumers. These studies have relied on a demand approach to markup estimation (e.g., Berry et al. 1995; Nevo, 2000) which estimates price elasticities and recovers marginal costs and markups that explain prices under a specific model of conduct such as Bertrand-Nash pricing for differentiated goods. In previous work, we have implemented such an approach on several occasions (e.g., Bonnet et al., 2013; Brunner et al., 2017; Döppler et al., 2022; Haucap et al., 2021, to name a few).

In a recent paper, Döppler et al. (2022) estimate markups using a demand approach for more than 100 product categories in the US and analyze the role of consumer preferences for changing markups. The model is estimated separately for each product category and year which allows consumer preferences, including price sensitivity, to vary over time. To enable the scalability of their method across so many categories and time periods, they rely on covariance restrictions (MacKay and Miller, 2023). This approach identifies the price coefficient by relying

on an orthogonality condition between two structural error terms of a demand system and a marginal cost function—conditional on a battery of fixed effects which capture quality differences, as well as firm and market characteristics. One project within work package 2 will build on the methodology developed in this paper.

A number of empirical studies look at specific determinants of (changes in) markups in cross-industry studies such as trade liberalization (e.g., De Loecker et al., 2016), changes in technologies (e.g., Foster et al., 2022; Stiebale et al., 2020) and changes in market structure induced by mergers and acquisitions (Blonigen and Pierce, 2016; Stiebale and Szücs, 2022). Several papers have analyzed market power and buyer power in vertical relations (see Bonnet and Bouamra-Mechemache, 2016). This package will extend this line of work.

WP3: Demand complementarities and their implications for market outcomes

Consumers generally complete a substantial part of their grocery purchases with a single visit to one retailer, and their shopping basket includes items from various product categories, as well as multiple items of the same product. Consumers' decision to visit a particular store thus depends on the price for the whole shopping basket which induces complementarity between products offered at a retail outlet that are initially independent or substitutable. This complementarity affects pricing strategies of retailers. In particular, it may lead a retailer to price one good below cost to attract consumers while selling other products with a higher margin (see Chen and Rey, 2012, 2019; Ide and Montero, 2020). Rhodes (2014) and Thomassen et al. (2017) argue that internalizing cross-product pricing effects on the intra-retailer margin with complementarity leads to lower retail prices as retailers have an incentive to drive volume rather than margins. On the other hand, Richards et al. (2016) show that complementarity on the inter-retailer margin is a source of market power for retailers. This complementarity also has consequences on the vertical relationships between retailers and manufacturers. Caprice and von Schlippenbach (2013) have shown that the complementarity arising from one-stop shopping behavior could affect the sequential bargaining of a monopolist retailer with its suppliers. The first supplier and the retailer manage to extract rent from the second supplier by distorting upward their wholesale unit price with a compensation through a slotting fee. Richards et al. (2018) focus on the effect of complementarity among products sold by a given manufacturer. They show that complementarity weakens the position of the manufacturer in its bargaining with a retailer. The complementarity generated by shopping trips is, however, different from a complementarity between the goods produced by a multiproduct manufacturer and is likely to generate opposite effects on the bargaining between producers and retailers which we plan to study in our project.

To measure the degree of complementarity between products from different categories, demand models following Deaton and Muellbauer (1980) consider that a rational representative consumer allocates total expenditures among different products. As pointed out by Nevo (2011), however, this approach does not allow the estimation of substitution patterns among a large number of products due to the curse of dimensionality, and requires aggregation at the level of product categories (e.g., cereal, milk, meat). Based on a consumer quadratic utility, Thomassen et al. (2017) develop a multiple-discrete-continuous model of store-category choice which allows

for product complementarity through shopping costs. As in previous works, however, they focus on consumer demand at the food category level rather than the individual product level. An exception is Lewbel and Nesheim (2019) who develop a demand model also based on a consumer quadratic utility specification which, moreover, nests standard continuous demand systems as well as standard discrete choice models (e.g., random coefficient logit model). While their approach allows for the analysis of demand at a much more disaggregate level, it does not handle the standard price endogeneity problem in demand estimation.

Another strand of literature has extended traditional demand models used in IO (e.g., Berry et al., 1995, 2004) by considering that every bundle of products is a distinct choice (e.g., Iaria and Wang, 2020; Ershov et al., 2021; Wang, 2022). These models enable the estimation of demand at a fairly disaggregated level (e.g., retailer-brand level), allow for consumer heterogeneity, and include demand synergy parameters to capture the extra utility generated by purchasing multiple products in a given shopping trip. Furthermore, they explicitly address the price endogeneity issue using instrumental variables techniques. As pointed out by Berry et al. (2014), however, this approach is also subject to a dimensionality issue. Based on the nonparametric framework of Berry and Haile (2014), a related approach that consists in directly estimating demand functions instead of utility parameters has been proposed by Compiani (2022). While this nonparametric approach allows for product complementarity, it is also subject to a dimensionality issue with large choice sets. One challenge thus consists in developing an empirical framework of multi-category demand based on insights from Berry and Haile (2014) and Compiani (2022) while imposing more structure through a parametric model à la Gentzkow (2007) to avoid this dimensionality issue.

WP 4: Firm entry and product assortment

The impact of entry by sellers operating different formats, such as discount and online stores, on pricing and assortment has received substantial attention within the academic literature. While some of the research points to social gains from entry due to the increased number of locations, as well as the competitive impact on prices (Hausman and Leibtag, 2007), others point to adverse effects on traditional stores and argue for the estimation of differential entry effects across store types (e.g., Ellickson et al. 2013; Arcidiacono et al., 2016). The results of this research indicate a significant level of heterogeneity in the impact of entry on incumbent firms and consumer welfare. While much of the research thus far has focused on entry by so-called “big box” retailers in the United States (Basker, 2007; Jia, 2008), the effects of discounter entry in Europe have not received substantial attention. Our project aims to evaluate how the entry of discounters has impacted market concentration and to estimate how the effects of discounter entry have evolved over time and across different European jurisdictions. This research relies on recent developments in the estimation of competitive effects based on the moment inequalities method proposed by Pakes et al. (2015) and implemented by Holmes (2011) and Ellickson et al. (2013) in the context of grocery retailing.³

³ For applications of similar entry models by members of the team, see Verboven and Yontcheva (2022) and Pennerstorfer and Yontcheva (2021). Lábaj et al. (2018a and b) demonstrate the team’s experience in the analysis of changes to the competitive environment over time.

In addition to evaluating the role of discounter entry in shaping market structure, this project connects to a growing literature which documents the role of product entry and exit in shaping product assortment and inflation inequality. Jaravel (2019) documents a 0.88 percentage point difference in annual inflation when comparing the bottom and top quintiles of the income distribution from 2004-2015 in the US. The empirical data points to product innovation and exit as drivers of this process: product manufacturers are shifting their product assortment towards high-quality, high-price products, thereby increasing competition in this segment and depressing markups. Meanwhile, product exit appears to be prevalent in lower-priced segments. Jaravel and O'Connell (2020) provide evidence that product variety has decreased further during the Great Lockdown, thereby exacerbating these effects. A pertinent research question in this context is how retailer market power has affected the inflation of prices and fall of variety in the low-income product segment. This research is closely related to previous work relating endogenous product selection and consumer welfare (Eizenberg, 2014; Fan and Yang, 2020).

We also aim to extend the literature on the impact of eCommerce on the retail grocery market. While there is substantial research on the topic of online retailing for durables, such as electronics (Duch-Brown et al., 2017), studies pertaining to the grocery sector are scarce. Pozzi (2013) examined the effect of online sales on brick-and-mortar sales of grocery sellers, focusing on the trade-off between own-store cannibalization and business stealing from competitors. Our research will extend the existing literature, by taking into account the vertical relationships between retailers and manufacturers, when evaluating the welfare effects for consumers. In this work, we will place a particular emphasis on the interaction between marketing strategies pertaining to private labels and online distribution channels.

Over the past two decades, platforms have become ever more important in the context of retailing. Understanding their role when it comes to fostering product innovation and entry of new products is crucial for economic policy. Platforms can often act as gatekeepers, which control the entry of sellers and products. A wide stream of literature has been dedicated to this issue (Hagiu, 2009; Galeotti and Moraga-González, 2009), with some recent research emphasizing the impact of platforms on product varieties, when the platform owns some of the products on offer (Anderson and Bedre-Defolie, 2021). Little is known, however, about the impact of the retail format (supplier-retailer relation or platform) on product variety. Our project aims to fill this gap in the theoretical modeling of the relationship between suppliers, retailers and platforms.

In a large number of industries, as for example in the supermarket industry, manufacturers deal with retailers (or intermediaries) to access final consumers. Understanding how bilateral agreements are formed in such vertical structures is of great interest to policymakers as it determines product variety and prices which, in turn, have profound impacts on welfare. In this context, the role of buyer power, which refers to the ability of retailers to influence the formation of trading relationships and terms of trade with manufacturers, has attracted considerable attention among scholars and antitrust practitioners these last decades.⁴ Montez (2007) initially

⁴ See the Symposium on "Buyer Power and Antitrust" released in the Antitrust Law Journal in 2005 (Vol. 72, No. 2).

uncovers a mechanism by which the bargaining power of a manufacturer arises from control over a scarce resource leading to exclusive dealing. Marx and Shaffer (2010) have then shown that stocking capacity restrictions intensify the competition for slots between manufacturers and enable a monopolist retailer to obtain a larger share of a lower industry profit. In the same vein, Ho and Lee (2019) have developed a bargaining solution which, for a given network, allows a downstream monopolist to gain bargaining leverage by threatening to replace each of its suppliers with an alternative one excluded from its network. Both Marx and Shaffer (2010) and Ho and Lee (2019) have highlighted that such a strategy would be profitable for a downstream monopolist whenever its buyer power towards manufacturers is limited. Chambolle and Villas-Boas (2015) have also shown how competing retailers would differentiate their assortment in order to gain buyer power, eventually offering an inefficient assortment to consumers. In a similar framework, Chambolle and Molina (forthcoming) have shown that buyer power could also enhance the profitability of exclusionary practices by a leading manufacturer. These results were developed in triangle relationships, that is, with a monopolist at one level. The literature studying interlocking relationships (i.e. a vertical structure with competition between producers and retailers) has emphasized the role of retail competition (see Rey and Vergé, 2020) or contracts (see Miklós-Thal, Rey and Vergé, 2010; Nocke and Rey, 2018) to explain incomplete distribution networks, but the role of buyer power is left unexplored.

Selected previous work by team members

We would like to emphasize the scientific expertise of the team based on ten selected articles across different topics.

Vertical relations and product selection:

Allain, Chambolle and Rey (2016) consider the effect of vertical integration in successive duopolies. While vertical integration is usually viewed as a solution to hold-up, they show that it can generate hold-up for rivals. These hold-up concerns arise when the integrated firm can commit ex-ante to degrading the support offered to independent downstream rivals, or when it has an incentive to do so ex post.

In a framework with two competing manufacturers which supply their product(s) through a monopolist retailer, Chambolle and Molina (forthcoming) show that buyer power restores the profitability of exclusive dealing or bundling involving inefficient exclusion. The mechanism underlying this exclusion is that the compensation required by the retailer to renounce selling the rival product erodes with its buyer power.

Gaudin (2018) shows that whether countervailing buyer power arises, in the form of lower input prices following greater concentration downstream, depends on the pass-through rate of input prices to retail prices. He finds that countervailing buyer power generally does not translate into lower retail prices because of heightened market power at the retail level.

Taxes and pass-through:

Bonnet and Réquillart (2013) propose a methodology to evaluate the impact of taxation of a food market taking into account the strategic price response of both manufacturers and retailers. They study the impact of an excise tax based on the sugar content of soft drinks. They show that ignoring strategic pricing by firms leads to misestimations of the impact of taxation by between 15% and 40% depending on the products and the tax implemented.

Determinants of pricing and markups in producer and retail markets:

Rickert, Schain and Stiebale (2021) exploit consumer home scan data to analyze the effects of a merger between a German supermarket chain and a soft discounter on consumer prices. The database is similar to the scanner data that we will explore in various tasks of the PARETO project. Exploiting geographic price variation within retail chains and brands, they find that the merger increased consumer prices in regions with high expected changes in retail concentration, but prices declined in regions that did not experience a rise in concentration but were potentially affected by cost savings within the merged entity.

Stiebale and Szücs (2022) employ a production approach to estimate markups as a measure of market power across a large number of firms and industries. A similar approach will be used in several projects in work package 1 and 2 of the PARETO project that analyze producer-level markups and productivity. Exploiting expert market definitions from the European Commission's merger decisions, they find that rival firms increase their markups after mergers, specifically when pre-merger concentration is high, when competitors are few and when relevant markets are national.

Pennerstorfer, Schmidt-Dengler, Schutz, Weiss and Yontcheva (2020) study the role of information in determining the distribution of prices on a retail market. Using detailed data on consumer behavior, together with price information at the retail level, they demonstrate that firms set lower prices in response to higher consumer information endowments and document an inverse-U relationship between consumer information and price dispersion.

Nocke and Schutz (2018) develop an aggregative games approach to study oligopolistic price competition with multiproduct firms. They introduce a new class of IIA demand systems, derived from discrete/continuous choice, and nesting CES and logit demands. They also extend the model to nonlinear pricing, quantity competition, general equilibrium, and demand systems with a nest structure and discuss several applications including merger analysis. This expertise with different demand systems will be useful for both theoretical and empirical analyses within this project.

Methodological contributions on demand estimation:

Grigolon and Verboven (2014) develop a random coefficients nested logit model, which combines the desirable characteristics of the nested logit and the random coefficients logit models. Their specification of demand yields significantly different substitution patterns relative to the standard models used in the literature. Their expertise regarding the optimal modeling of market segmentation will be beneficial for the research outlined in this proposal.

Heiss et al. (2021) develop a model which allows to distinguish between two sources of consumer inertia: inattention and switching costs. They apply this model to understand individual choices in Medicare Part D. However, modeling consumer inertia and understanding its sources can also be important to understand consumption choices in retail markets within the PARETO project.

1	Allain, Chambolle and Rey (2016), "Vertical Integration as a Source of Hold-Up", <i>Review of Economic Studies</i> , 83 (1): 125.
2	Bonnet C. and V. Réquillart (2013), "Tax incidence with strategic firms on the soft drink market", <i>Journal of Public Economics</i> , 106, pp 77-88
3	Chambolle, C. and Molina, H. « A Buyer Power Theory of Exclusive Dealing and Bundling » <i>American Economic Journal: Microeconomics</i> , forthcoming, https://www.aeaweb.org/articles?id=10.1257/mic.20210191&&from=f
4	Gaudin, G. (2018), "Vertical Bargaining and Retail Competition: What Drives Countervailing Power?" <i>Economic Journal</i> , 128(614), 2380-2413.
5	Grigolon, L., & Verboven, F. (2014). "Nested logit or random coefficients logit? A comparison of alternative discrete choice models of product differentiation", <i>Review of Economics and Statistics</i> , 96(5), 916-935.
6	Heiss, F., McFadden, D., Winter, J., Wuppermann, A., & Zhou, B. (2021). Inattention and Switching Costs as Sources of Inertia in Medicare Part D. <i>American Economic Review</i> , 111(9), 2737–2781.
7	Nocke, V. and Schutz, F. (2018), "Multiproduct-Firm Oligopoly: An Aggregative Games Approach", <i>Econometrica</i> , 86(2), 523-557.
8	Pennerstorfer, D., Schmidt-Dengler, P., Schutz, N., Weiss, C., & Yontcheva, B. (2020), "Information and price dispersion: Theory and evidence". <i>International Economic Review</i> , 61(2), 871-899.
9	Rickert, D., J. P. Schain, and J. Stiebale (2021), Local Market Structure and Consumer Prices: Evidence from a Retail Merger, <i>Journal of Industrial Economics</i> , Volume 69 (3).
10	Stiebale, S. and Szücs, F. (2022), "Mergers and market power: evidence from rivals' responses in European markets" <i>RAND Journal of Economics</i> , 53, 678-702.

Methodology and risk management

The project comprises four work packages. The tasks of each package are coordinated by one work package leader. WP1 is managed by Claire Chambolle (French PI), WP2 by Joel Stiebale (German PI), WP3 by Hugo Molina (French team) and WP4 by Biliana Yontcheva (German PI). Each work package contains research projects both in empirical and theoretical IO.

WP1: The determinants of pass-through

The concept of pass-through is the mechanism by which a change in the cost at one stage changes the price at another stage going top down within a vertical chain. Understanding the determinants of pass-through is key in many dimensions. It enables policy-makers to anticipate how a shock, such as the rise in the price of energy or agricultural commodities or the implementation of an excise tax, ultimately affects the price paid by consumers and their consumption. The IO literature allows for the existence of market power at each level of the vertical chain and models how firms at different stages of the supply chain strategically respond to these shocks, thereby determining the level of pass-through.

We plan to conduct theoretical and empirical research that contributes to this literature. Our first work package comprises four main tasks. The first task relates to the transmission of global shocks, such as those caused by the COVID-19 crisis or by Russia's invasion of Ukraine, that have created an unprecedented level of inflation in 2023. The second task focuses on health

policies imposing excise taxes on targeted products. We emphasize how product reformulation strategies of producers in response to the tax in turn affect their pass-through. The third task examines the impact of corporate taxes on producer and consumer prices in the presence of incomplete deductibility of production costs and endogenous markups. The final task of this package aims to determine how pass-through depends on the nature of the cost shock, by distinguishing between industry- and product-level cost changes.

Task 1. Global shocks and inflation

According to the FAO Food Price Index, food has never been as expensive as it is nowadays: prices have been rising by 18.2% in 2022 in Europe and forecasts suggest that this trend will accelerate in 2023. This inflation has its origins in the COVID-19 crisis, which has durably disrupted the functioning of global value chains and made access to certain goods difficult (due to supply shortages and increased transportation costs). This process has been exacerbated by Russia's invasion of Ukraine which increased the cost of raw materials and energy and thus the suppliers' production costs. This inflation has been transmitted along the chain and consumers are now faced with soaring prices in stores.

In this context, STIEBALE, TUROLLA and a PhD student, financed by the PARETO project, will study the recent evolution of food retail prices in several European countries including France and Germany: two countries that face different price increases (12.9% and 19.5% for France and Germany respectively at the end of 2022; see Eurostat Food HICP) and differ in their retail market structure. The first objective is to document the evolution of food retail prices across countries and to compare the evolution of prices in order to identify global and country-specific shocks. The second objective is to measure retail pass-through and analyze the mechanisms at play behind the observed price adjustments. Previous studies have shown that retail pass-through may differ according to the degree of vertical and horizontal competition, but these studies rely on small input shocks (Hellerstein and Villas-Boas, 2010; Hong and Li, 2017). The current inflation period offers a unique opportunity to quantify the relative importance of both channels on retail pass-through rates. This will provide key insights to explain the surge in food prices. Finally, the authors wish to understand to what extent indirect effects, that is, products barely impacted by the rise of inputs also increasing their prices in response to the rise of impacted rival prices (see Amiti, Itskhoki and Konings, 2019), can also explain the current inflation rate. This project will use the AiMark dataset that we plan to fund thanks to the PARETO project.

LICHTER, STIEBALE and a PhD student, who will be hired thanks to the PARETO project, plan to study the effects of energy cost shocks on producers' prices, markups, and marginal costs. In Germany, the federal network agency determines the network charges of local electricity operators and these charges account for about 40% of the final electricity prices. Previous research has shown that variations in network charges over time affect energy consumption at a local level but lead to little response in entry and exit of manufacturing plants (von Graevenitz and Rottner, 2022) which reduces endogeneity concerns regarding firms' exposure to network charges. Their study will exploit these institutional features of the German energy market which generate exogenous variation in network charges without affecting the market structure of manufacturers.

The authors will use firm- and plant-level data from the German statistical office that includes information on energy consumption, as well as material, labor, and capital inputs, in addition to plant-product-level information on quantities and prices. As both network charges and energy consumption are observed at the plant level, it is possible to take into account the differential exposure across plants and industries. The study will apply recent advances in the estimation of production functions for multi-product firms (e.g., De Loecker et al., 2016; Dhyne et al., 2022) to estimate total factor productivity and markups at the plant-product level. Marginal costs can be recovered from estimated mark-ups and observed producer prices. This should allow for a decomposition of the effects of changes in electricity prices into changes in producers' production costs and markups.

Task 2. Excise taxes and product reformulation strategies

Improving the quality of consumers' diet is a target of public health policy. The number of countries that have implemented a tax on unhealthy foods is growing rapidly. Most taxes target sugary beverages, but in some cases they also target sugary or fatty food products. Governments thus encourage consumers to make healthier food choices and firms to reformulate food products. A large literature has studied the impact of excise taxes on consumption and the observed decrease is generally considered to be a consequence of the price increase of taxed products. However, an excise tax may also have implications on the product reformulation by producers which in turn affects the equilibrium pass-through, and this effect has received less attention.

BONNET and TRANCHARD note that, although we observe some reformulation effects due to the introduction of taxes (UK Government, 2018), the implication of a tax on the formulation of products is still ignored in the literature of ex-ante policy evaluation. Their project thus aims at developing a structural econometric demand and supply model that allows both price and quality (or product formulation) reactions to tax policies. Using the Kantar WorldPanel dataset on dairy dessert purchases combined with nutritional information from the Oqali dataset, they will develop a marginal cost model integrating all technological constraints of producing dairy dessert products. They will extend the methodology of Barahona et al. (2023) by endogenizing the formulation of products (mainly composed of sugar and milk) both on the demand and on the supply side.

ALLAIN, CHAMBOLLE and CERLES plan to study how a multi-product firm responds to an excise tax through both its prices and its investments. The Edgeworth paradox states that a multi-product firm selling imperfect substitutes might answer to an excise tax imposed on one of its products by either raising both product prices, or rising the price of the taxed product and decrease the price of the other product, or decreasing the two prices (see Edgeworth, 1925). The goal of this project is to understand how this Edgeworth paradox on pass-through evolves in the context of a multi-product firm that is able to adapt both its investment and pricing strategy after the implementation of a tax. They plan to analyze classic investments aimed at either increasing product quality or reducing the unit cost of production, and investments that consist of reformulating the product to reduce the impact of the tax. This theoretical study will also consider various market structures. For example, it will allow for competition among multi-product firms or among mono- and multi-product firms. The authors will study how their

result depends on whether the multi-product characteristic comes from the supply or the retailing activity.

Task 3. Corporate tax pass-through

There is a controversial debate about the optimal rate of corporate taxes (typically collected as a share of firms' profits) among policy makers and within the popular press. An often overlooked aspect in this debate is that corporate taxes can have an impact on prices. A feature of most tax systems is that some production costs are only partially deductible from taxable income. This feature together with the incidence of endogenous markups will affect the degree of pass-through of corporate taxes to producer prices. Previous research has analyzed the association between taxes paid by producers and retail prices paid by consumers (e.g., Baker et al. 2020; Dedola et al. 2022), while less is known about the more direct impact of taxes on producer prices. Further, the existing literature does not decompose price responses into changes in markups and marginal costs.

LICHTER, STIEBALE and a PhD student, financed by the PARETO grant, will analyze the effects of corporate tax rates on prices and mark-ups of German manufacturing firms. Next to national profit taxes, German firms are subject to local business taxes (Gewerbesteuern) which vary at the municipality level. Their empirical strategy is to exploit geographical and time series variation in local business taxes and to estimate their effects on markups and producer prices. They will use firm- and plant level data from the German statistical office (AfiD and cost structure survey) which include information on material, labor and capital inputs next to plant-product level information on quantities and prices. This data set allows them to apply advanced techniques for the estimation of production functions for multiple-product firms (e.g., De Loecker et al., 2016; Dhyne et al., 2022) to recover productivity and markups at the plant-product level. Since the data includes information about location of plants, they can relate these variables to exogenous variation in local business taxes. There have been multiple tax changes across municipalities since 2006 (see, e.g., Lichter et al., 2021). The team plans to exploit the staggered adoption of tax rate changes across municipalities in a difference-in-differences setting to estimate the effects of tax changes on producer prices, markups and marginal costs.

Task 4. The prominent determinants of pass-through rates

The literature on pass-through has identified several determinants such as the curvature of demand (Nakamura and Zerom, 2010), markup adjustments (Hellerstein and Villas-Boas, 2010), firms' market power (Hong and Li, 2017) or collusion (Kim and Cotterill, 2008). It is still a challenge to identify, among all these determinants, those that are salient, from those of second or even of third order relevance in explaining the heterogeneity in pass-through rates.

BONNET will develop a structural model of demand and supply, the supply side modeling taking into account the vertical structure between suppliers and retailers, to assess the pass-through in the French alcohol industry. She will focus on the following six different alcohol categories: ciders, beers, aperitifs, spirits, still wines, and sparkling wines. These markets were chosen because their structures are heterogeneous in terms of number of suppliers, share of private labels, price levels, and variety of products. To generate a dataset of pass-through rates and then analyze its demand and supply determinants, she will simulate the effect of a large set of

exogenous and random cost shocks that are either industry-specific (a cost shock on an essential input or a tax) or product-specific (such as a local non-traded cost shocks or movements in the exchange rates of imported products). Using this pass-through rates database, she plans to determine which among the nature of the cost shock, the shape of the demand function, or the various characteristics of the industrial organization of the supply chain, are the most prominent determinants of the pass-through along the vertical chain.

WP2: The evolution and rationalization of markups

Market power is the ability of firms to price above their marginal cost. Wedges between prices and marginal costs, i.e. markups, can transfer wealth from consumers to producers and can lead to allocative inefficiency if consumers shift their purchases. Markups can also affect the demand for labor and other inputs and affect firms' incentives to invest and to innovate. A number of recent studies have therefore analyzed how and why markups have changed over time. Some of these studies have documented a substantial increase in market power over the past decades.

The sources of markup increases are not yet well understood and seem to differ across industries and regions studied and the econometric methods employed. Understanding the mechanisms behind markup increases is, however, essential for assessing resulting welfare effects. For instance, if markup increases are driven by mergers or anti-competitive conduct, this implies negative consequences for consumers and calls for policy intervention. In contrast, if markups rise because of changing technologies, which lead to higher fixed costs and lower variable costs, or due to higher quality, rising markups do not necessarily imply lower welfare. Further, it has not always been possible to cleanly disentangle seller power from market power in input markets. The latter comprises buyer power and bargaining power of retailers and producers vis-a-vis their suppliers as well as market power in labor markets.

While the previous literature has focused mostly on the US, we provide several contributions based on European data which we organize in two tasks. The first task deals with documenting the existence and evolution of market power and buyer power in producer and retail markets. The second task includes theoretical and empirical contributions which analyze selected determinants of markups that are of particular relevance in retail markets: the timing of retail and wholesale price determination; and policies which reveal additional information about the nutritional content of retail products or producer margins to consumers.

Task 1. Evolution of market power in producer and retail markets

This task includes three projects which aim to characterize and explain the evolution of market power in French and German manufacturing firms and for consumer packaged goods in a broader set of European countries.

DÖPPER and STIEBALE will analyze the evolution and determinants of markups for consumer packaged goods across several European countries. The empirical framework builds on Döpper et al. (2022) who use a demand approach to analyze the evolution of market power in the US. Based on detailed price and quantity data, the authors will estimate demand systems in the spirit of Berry et al. (1995) separately for each product category, country and year. Scalability of

the approach across many product categories is possible through a covariance restrictions approach (MacKay and Miller, 2023), which does not require the use of instrumental variables, in combination with the computing power of the high performance cluster at Heinrich Heine University Düsseldorf. The results of this paper will reveal differences in consumer preferences and the evolution of markups and marginal costs across countries. Based on these estimates, we will then investigate determinants of cross-country and cross-category differences over time to test possible mechanisms. Candidate explanations for differences across markets are variation in market structure affected by vertical relations, mergers, entry and exit, as well as differences in income and other demographics. We also aim to analyze to what extent markups have changed during the recent period of high inflation in different countries. This project will use the AiMark dataset that we plan to fund thanks to the PARETO project.

AVIGNON and TUROLLA will analyze the relationship between trade liberalization and markups in French manufacturing firms. Trade liberalization has been identified as a potential reason for rising markups due to cost savings from intermediate imported inputs that are not fully passed on to consumers (De Loecker et al., 2016; Curzi et al. 2021). However, the mechanism by which trade liberalization reduces marginal cost has been overlooked. Marginal costs can be reduced because of productivity increases but also due to better sourcing conditions. This paper aims to quantify the relative contribution of each channel to the change in marginal costs. The authors will answer this question by applying recent advances in the estimation of production functions and markups at the firm-level (e.g., De Loecker et al., 2016; Avignon and Guigue, 2022). Their approach will control for standard econometric biases (output and input price heterogeneity, quality heterogeneity) and will allow them to decompose the firm's production technology into two components: processing and sourcing. By separating both components, they will investigate firms' reaction to trade liberalization and to what extent it affects marginal costs and markups. More broadly, this study will provide new insights on the evolution of markups over a long period of time and will allow for cross-country comparisons with the German team. The study will use a rich data set on French manufacturing firms composed of production data (PRODCOM database), balance sheets information (FICUS-FARE database) and customs data. This data is available for a long period of time in France and can be accessed by means of a secure data hub (CASD).

GAUDIN, ROMAHN, STIEBALE and a PhD student, financed by the PARETO grant, aim to estimate the degree of markups, buyer power and labor monopsony power in German manufacturing industries. For this purpose, they will use firm- and plant-level data from the German statistical office (AfiD and cost structure survey) which includes information on material, labor and capital inputs next to plant- product-level information on quantities and prices. This data set allows them to apply advanced techniques for the estimation of production functions for multiple-product firms (e.g., De Loecker et al., 2016; Dhyne et al., 2022) to recover physical total factor productivity and input-output elasticities at the plant-product level. The availability of detailed price and quantity data by plant and product category enables them to estimate a demand system in the spirit of Berry et al. (1995) for each product category. Their empirical strategy builds on recent identification results by Rubens (2023). The demand system identifies seller power (markups) without imposing assumptions about market power in inputs. Estimated input-output elasticities from production functions together with observed revenue shares at the

plant level allow them to recover a composite of seller power and market power for each input. By combining the two approaches, they can separately identify buyer power and monopsony power across industries, time, and regions. In contrast, the existing literature has either assumed the absence of buyer power and/or monopsony power, or has used institutional features of specific industries that cannot easily be generalized to a large set of markets. This project will relate the findings to the recent theoretical literature on buyer power to test alternative mechanisms. The output of this study, and the one by Avignon and Turolla described above, will enable the comparison of estimates of market power between German and French firms across industries and time.

Task 2. Determinants of mark-ups

This task includes three case studies of markup determinants which focus on specific aspects of retail markets.

MOLINA aims to develop an empirical model of vertical relations. Based on the “Nash-in-Nash” bargaining solution. The previous empirical literature has relied on two different assumptions to model buyer-seller bargaining in vertical markets: (i) wholesale prices and retail prices are determined simultaneously (e.g., Draganska et al. 2010; Ho and Lee, 2017; Crawford et al., 2018; Sheu and Taragin, 2021), and (ii) wholesale prices are chosen before retail prices (Crawford and Yurukoglu, 2012; Bonnet, Bouamra-Mechemache and Molina, 2021). However, as shown in recent work, this timing assumption is not innocuous and may have important consequences in the study of various policy-relevant questions (Moresi, 2020; Bonnet, Bouamra-Mechemache and Molina, 2021). The empirical model developed in this project will include both timing assumptions as special cases, thereby generalizing the existing “Nash-in-Nash” bargaining models. Motivated by the fact that information transmission within a firm may be subject to some frictions, the model will consider a framework of vertical relations with intra-firm information frictions. Conditions ensuring that the system of first-order conditions of the “Nash-in-Nash” bargaining model can be inverted to solve each price-cost margin of manufacturers as a function of bargaining and information friction parameters will be provided. This project also aims to show that these parameters can be identified using exogenous variation that shifts the price-cost margins of manufacturers but not the marginal costs of products.

CHAMBOLLE, MOLINA AND PAROISSIEN will develop a theoretical project on the role of fairness labels regarding the profit sharing with the vertical relationships between producers and retailers using the idea of regulatory shaming developed in Ater and Avishay-Rizi (2022). This label would appear in the product package and signal the ratio between the price paid by the retailer to the farmer and its marginal cost. As consumers positively value the remuneration of producers, such a label is likely to generate new trade-offs. This analysis will shed light on the potential consequences of the Rémunéra-Score policy in France, which plans to introduce such a label in 2026. The principle to adopt a Rémunéra-Score was already voted in 2021 (see law no 2021-1357), but it was also decided that an experimental phase of 5 years would help define its practical implementation.

MARTIN, PAROISSIEN, STIEBALE and a PhD student will analyze the effects of changes in nutrition facts labels in the US that were announced in 2016. The most important changes were

to include information on added sugar on the label and to make the amount of calories, serving sizes, and servings per container more prominent by increasing font size. Firms with more than 10 million dollars annual sales were required to update labels by January 2020, all remaining firms by January 2021. Previous evidence (Neuhofer et al., 2020) has used eye-tracking technologies to show that the new nutrition labels increased visual attention. Therefore, we expect that this attention has led to an increased demand for healthier products. The aim of the empirical analysis is to quantify these changes. Further, we will test the hypothesis that companies adjust the nutritional content of their food products in response to updated nutritional labels and introduce healthier products. Finally, we will test to which extent the policy change has led to greater market power for relatively healthy products. By estimating flexible demand models and incorporating endogenous product attributes and pricing decisions, we can quantify the effects of this policy on consumer welfare, market power, and product differentiation. Finally, using counterfactual simulations, our objective is to provide policy conclusions regarding the effectiveness of nutrition labels relative to alternative policies that have been studied in the literature, such as food warning labels (Barahona et al., 2020) and sugar taxes (e.g., Allcott et al., 2019).

WP3: Demand complementarities and their implications for market outcomes

A specific feature that distinguishes food retailers from other types of intermediaries is that they carry multiple categories of products that consumers buy during their shopping trips (e.g., milk, breakfast cereals, yogurt, soft drink, and bottled water). The one-stop shopping behavior of consumers is also known to create complementarity among a priori completely independent product categories (e.g., fruits & vegetables and care & beauty). Building on the seminal work of Berry (1994) and Berry et al. (1995), most existing empirical studies of oligopoly competition and vertical relations have focused on a single product category. Measuring the interdependence in consumption between food categories is key to understanding the strategic behavior of retailers, especially if the price of one product is likely to affect the demand for products from the same category and from other food categories. In this work package, we plan to examine both theoretically and empirically how these “multi-category” effects (Smith et al. 2012) are likely to modify the profit sharing of firms within the vertical chain as well as the welfare consequences of public policies. In the first task, we develop novel demand models that allow researchers to estimate these “multi-category” effects in a tractable way (Smith et al. 2012). We also aim at accounting for the fact that consumers may buy multiple quantities of a product each time they go shopping. In the second task, we examine how the complementarity among products affects consumers’ choices, the profit sharing of firms within the vertical chain, and the evaluation of public policies.

Task 1: Multi-category demand models

Our purpose is to develop new methods for demand estimation which allow for rich substitution patterns among a large number of products, including complementarity between products that belong to different food categories.

MOLINA will develop a new multi-category demand model in the supermarket industry. As already pointed out in the literature review, the seminal model of Gentzkow (2007) may suffer

from a curse of dimensionality in situations with large choice sets as the number of parameters to be estimated grows with the number of bundles of products (e.g., Berry et al., 2014). To address this issue, he aims at using a novel approach that consists in directly estimating product-level demand functions instead of the full set of utility parameters. In particular, he will leverage recent identification results by Wang (2022) who shows that product-level demand functions can be identified under weaker conditions than random coefficients and Gentzkow's (2007) demand synergy parameters. After recovering the substitution pattern among products from different food categories, he plans to estimate the market power of supermarkets to measure how "multi-category" effects impact their pricing strategies as in Thomassen et al. (2017).

For product categories such as cereals, yogurts, or soft drinks, consumers typically buy more than one item during a shopping trip. Hence, in addition to accounting for the purchase of products from multiple food categories, GRIGOLON will develop a representative consumer flexible demand model which avoids the discreteness assumption typically imposed in discrete choice models. To this end, she will begin by specifying an indirect utility function from which, via Roy's identity, a continuous-choice demand system is derived. The demand function implied by the model is fully analytic and therefore avoids the burden of simulation. Moreover, the model is flexible in the sense of Diewert (1973, 1974) as the implied own- and cross-price elasticities can capture the true substitution patterns in the data. In contrast to most existing continuous-choice demand models (e.g., AIDS), the approach developed in this project can accommodate changes in the number of products offered to consumers. The importance of this last property is twofold as (i) not being able to cope with entry and exit patterns limits the application of the above models, and (ii) the ability to deal with variation in the set of choices available to consumers provides pseudo-price variation, which can be very helpful in the identification of substitution patterns between products. The model will first be tested using IRI scanner data for the US, a well-established standard database. In the next step, the model will be adjusted and estimated on European data from the AiMark database that we plan to fund thanks to the PARETO project.

Task 2: Strategic implications of "multi-category" effects

Complementarity among product categories affects consumers' choices, retailers' pricing strategies, and the profit sharing within the vertical chain. A better understanding of these effects and their implications on market outcomes may enable in turn to better design public policies.

MOLINA and PAROISSIEN aim at measuring how the behavior of consumers is affected by food labels when deciding which product(s) to consume for lunch. To this end, they use consumer-level panel data on food purchases at six canteens owned by BNP Paribas. Leveraging a natural experiment in which a "Nutri-Score display" intervention was carried out for all products in three of the six canteens, they aim to analyze the effect of Nutri-Score on the consumption of products in each food category (starter, main dish and dessert) taking into account potential effects between categories (e.g., the Nutri-Score display in main dishes may not only affect consumer choices in the main dish category, but also in the dessert category). Based on Gentzkow (2007), they plan to develop a demand model that allows consumers to choose products belonging to different food categories and which accommodates both

unobserved heterogeneity in consumer preferences as well as complementarity between products. Allowing the Nutri-Score to affect the degree of complementarity/substitutability between products, they will be able to better assess the welfare effect of this nutritional policy on consumers.

ALLAIN, AVIGNON, CHAMBOLLE, CHRISTIN, MOLINA and SCHUTZ will study the impact of the complementarity between products sold in a retail store on the profit sharing between producers and retailers. More specifically, it is well-known that must-have products play a key role in attracting consumers to the store of a retailer. Once in the store, consumers are likely to buy additional products from other food categories. Therefore, the sales of a must-have product generate a direct benefit for the retailer, but also an indirect benefit through the additional sales of other products (see, e.g., Ide and Montero, 2020a). The direct benefit is easily observed by the manufacturer, as it is directly revealed by its own product sales. However, the indirect benefit obtained by the retailer thanks to the sale of the must-have product is unlikely to be observed by its manufacturer. If so, during bilateral negotiations with the retailer to determine wholesale tariffs, it is likely that the manufacturer will underestimate the retailer's gains from trade, yielding a bargaining advantage for the retailer. This project thus aims at analyzing how the profit sharing between manufacturers and retailers is distorted in the presence of product complementarities generated by must-have products. They plan to analyze how contracts and regulation of manufacturer-retailer relationships can help overcome this issue.

WP 4: Firm entry and product assortment

Inflation on the market is driven not only by price increases of existing products, but also from entry and exit of products and sellers. This work package seeks to analyze the determinants and the effects of entry. It focuses on market segments characterized by substantial growth, such as discounters and e-commerce. Additionally, it aims to study how the product selection strategies of retailers are impacted by competition, resulting in changes in the assortment of products offered and the diet of consumers.

The first task is dedicated to analyzing the effect of entry by discounters and e-commerce sellers on the product range offered by incumbents. The goal is to quantify the differential effects across income groups and product types (private label vs. branded products). It seeks to connect market structure with food availability at a disaggregated product- and spatial level. The second task proposes an analysis of the impact of e-commerce on retail competition and consumer welfare, as well as on the vertical relations within the industry. The third task analyzes the role of retailers as gatekeepers, who select which products to offer to consumers, thereby creating different types of distribution networks. It focuses on slotting fees, which have grown substantially since the mid-1980s and now constitute almost 20% of the variable profits of retailers for some product groups (Hristakeva, 2022). Understanding the role of slotting fees in product entry and exit and how they shape the retail network in a vertical structure with competition at both levels is still an overlooked topic.

Task 1: Discounter entry and product assortment

A key concern in the context of the current cost-of-living crisis is the impact of inflation on different income groups. A growing literature has documented that the welfare effects of inflation depend crucially on the ability of individuals to adjust their purchasing behavior to cheaper variants of the products they consumed originally (Nevo and Wong, 2019). In this context, the availability of discount stores and competition in the low-price segment play a crucial role in isolating vulnerable social groups from the impact of the current crisis. With this in mind, this work package seeks to investigate how entry of discounters affects product availability and competition in different price segments.

HEISS, RICKERT, YONTCHEVA and a PhD student financed by the PARETO grant plan to analyze the entry behavior of hard discounters in a set of European countries. Over the past two decades, the networks of hard discounters, such as Lidl and Aldi, have expanded substantially. The team plans to evaluate how store entry affects incumbent strategies with regard to pricing and location. In addition to this reduced-form information, they plan to investigate differences in the response of retailers to discounter entry across European jurisdictions based on a moment-inequalities approach (Pakes et al., 2015; Ellickson et al. 2013).

YAN, YONTCHEVA and a postdoctoral member of the French team financed by the PARETO grant plan to analyze the changes in consumer behavior following the Great Lockdown and the potential drivers of reduced product variety. In a first step, they will document the impact of the Great Lockdown on the inflation differential across income groups for a set of common food items in European countries. They will then evaluate how consumers have adjusted their purchase behavior, focusing specifically on changes in household propensity to purchase from hard discounters and online sellers. This project complements the existing macroeconomic literature (see Jaravel, 2019), by focusing on commonly purchased food items and by analyzing changes in product variety and pricing in local markets, accounting for differences in consumption across income quintiles and market structures.

Task 2: Online channel entry

The global e-commerce food market has grown by almost 50% year-on-year in 2020, registering the highest year-on-year growth of all e-commerce segments within the Statista Digital Market Outlook. The online distribution channel is an opportunity for retailers to develop new marketing strategies to increase their profitability. This strategy is manifested in the rising share of private label sales online and may result in a stronger bargaining position for retailers relative to manufacturers. Within this task, we seek to evaluate how entry into the e-commerce segment affects consumers and manufacturers.

The market share of private label products is higher on online distribution channels than in standard brick-and-mortar stores (Arce-Urriza and Cebollada, 2012). This is likely driven by the variety of marketing strategies available to retailers with access to the online channel (e.g. promotional activities of private label products, algorithms determining the ranking of products). BONNET will analyze how online marketing strategies related to private label products change the profitability of retailers and their vertical relationships with manufacturers. Using home-scan data on soft drink purchases in France, she will implement a structural econometric model to represent consumers' and firms' (retailers' and manufacturers') behavior. Her framework aligns with the literature on structural bargaining models that enable retail competition and profit

sharing between manufacturers and retailers (Draganska et al., 2010). In order to study the impact of e-commerce, she will use a counterfactual experiment method to analyze the effect of the introduction of the online distribution channel and the online marketing strategies related to private label products.

A growing literature is dedicated to comparing the market outcomes (tariffs, prices, consumer surplus) in a traditional supplier-retailer relation with the same outcomes when the products are sold through a platform. Both business models co-exist in e-commerce. ALLAIN will develop a theoretical analysis to study the effect of these different vertical market structures on the entry of upstream suppliers and the variety of products, in a setup in which the monopolist retailer or the platform can control entry through a fixed entry fee. The model will allow her to compare tariffs and prices in both market structures, and to analyze the entry incentives of upstream suppliers.

Task 3: Vertical relations and strategic product selection

The final task of this work package aims at understanding how buyer power and competition at each level of a vertical chain affect the product selection of buyers. This is a key issue because buyers’ product selection directly affects the product variety and retail prices offered to consumers and, ultimately, consumer’s diet. The task explores the role of slotting fees which are paid by producers to introduce their product on retailer’s scarce shelf space (Chambolle and Christin, 2021). The methodological challenge is to study this issue in a context of interlocking relationships: with competition at both levels of the vertical channel, moving away from the simplified triangle structures previously used in the literature (Montez, 2007; Marx and Shaffer, 2010).

CHAMBOLLE, CHRISTIN AND MOLINA thus plan to study retailers’ product selection in a model of interlocking vertical relationships between manufacturers and retailers. Building on Chambolle and Molina (forthcoming), they will use their game of “Nash-in-Nash” bargaining with prior competition for a slot to formalize the selection and bargaining process. In this game, the manufacturer can offer a slotting fee to place its product and this product selection phase takes place before the “Nash-in-Nash” bargaining. This model will explore the role of substitution among retailers and of buyer power in determining retail assortments. The team then plans to analyze the impact of mergers at each level, as well as how vertical integration affects equilibrium prices and assortments, and to derive policy implications. They will check whether previous results, according to which buying groups reduce the variety of products offered to consumers, hold when this interlocking relationship framework is applied (Allain, Avignon and Chambolle, 2020).

Timetable

The Gantt chart below summarizes the planned time schedule and the responsibilities for each project.

	Data preparation/collection		Econometric analysis		Model development
	Seminars/conferences		Paper writing		Submission/revision

WP	Task	Responsibilities	Quarter												
			1	2	3	4	5	6	7	8	9	10	11	12	
1	1	Stiebale, Turolla, PhD	Blue	Blue	Blue	Blue	Yellow	Yellow	Orange	Orange	Grey	Grey	Purple	Purple	
		Lichter, Stiebale, PhD	Blue	Blue	Green	Yellow	Yellow	Yellow	Orange	Orange	Grey	Grey	Purple	Purple	
	2	Bonnet, Tranchard	Yellow	Yellow	Yellow	Yellow	Orange	Orange	Grey	Grey	Purple	Purple			
		Allain, Chambolle, Cerles	Green	Green	Green	Orange	Green	Green	Orange	Grey	Grey	Purple	Purple	Purple	
	3	Lichter, Stiebale, PhD	Blue	Blue	Green	Yellow	Yellow	Yellow	Orange	Orange	Grey	Grey	Purple	Purple	
	4	Bonnet	Yellow	Yellow	Yellow	Orange	Orange	Grey	Grey	Purple	Purple				
	2	1	Dopper, Stiebale	Blue	Blue	Yellow	Yellow	Yellow	Yellow	Orange	Orange	Grey	Grey	Purple	Purple
		Avignon, Turolla	Blue	Blue	Yellow	Yellow	Yellow	Yellow	Grey	Grey	Orange	Orange	Purple	Purple	Purple
		Gaudin, Romahn, Stiebale, PhD	Blue	Blue	Green	Green	Yellow	Yellow	Yellow	Orange	Orange	Grey	Grey	Purple	Purple
	2	Molina	Yellow	Yellow	Orange	Blue	Yellow	Yellow	Yellow	Grey	Grey	Purple	Purple	Purple	
		Chambolle, Molina, Paroissien			Yellow	Yellow	Yellow	Yellow	Yellow	Orange	Grey	Grey	Purple	Purple	
		Martin, Paroissien, Stiebale	Blue	Blue	Green	Yellow	Yellow	Yellow	Orange	Orange	Grey	Grey	Purple	Purple	
3	1	Molina	Green	Green	Green	Green	Blue	Blue	Blue	Yellow	Yellow	Yellow	Grey	Grey	
		Grigolon	Green	Green	Blue	Blue	Yellow	Yellow	Orange	Orange	Grey	Grey	Purple	Purple	
	2	Molina, Paroissien	Yellow	Orange	Orange	Yellow	Orange	Grey	Grey	Grey	Purple	Purple	Purple	Purple	
4		Allain, Avignon, Chambolle, Christin, Molina, Schutz	Green	Green	Green	Orange	Green	Green	Orange	Grey	Grey	Grey	Purple	Purple	
	1	Heiss, Rickert, Yontcheva, PhD	Blue	Blue	Green	Green	Green	Orange	Grey	Grey	Grey	Orange	Purple	Purple	
		Yan, Yontcheva, PostDoc	Blue	Blue	Green	Green	Green	Orange	Grey	Grey	Grey	Orange	Purple	Purple	
	2	Bonnet	Yellow	Yellow	Yellow	Orange	Orange	Grey	Grey	Purple	Purple				
		Allain	Green	Green	Orange	Green	Green	Green	Orange	Grey	Grey	Grey	Purple	Purple	
	3	Chambolle, Christin, Molina	Green	Green	Green	Orange	Grey	Grey	Purple	Purple	Purple	Purple	Purple	Purple	

2. Organisation and implementation of the project

2.1. Consortium

The French team will be headed by Dr. Claire Chambolle. The German team will be headed by Prof. Dr. Joel Stiebale and Jun.-Prof. Dr. Biliana Yontcheva.

Joel Stiebale's work has looked at the evolution of markups in retail and producer markets, as well as the role of vertical integration and mergers on firm pricing. His research is also concerned with the impact of market structure on innovation and productivity, topics of particular relevance in the context of growing market concentration in producer and retail markets. He has substantial experience with project management, having acted as project leader on grants from the DFG and the Fritz Thyssen foundation. He has also worked on policy-oriented reports for the European commission as well as national institutions in Germany.

Biliana Yontcheva's research is focused on understanding the role of market structure and consumer information in shaping firms' pricing decisions, with an emphasis on cost pass-through and dispersion. In a complementary agenda, she also studies the determinants of equilibrium entry locations and the impact of firm entry choices on consumer welfare. This expertise will be of particular relevance when studying the expansion of new retail formats and discrete decisions regarding product adoption. She has experience with project management, having acted as project leader on an Austrian National Bank grant in the past.

Claire Chambolle's research has focused on retail pricing and assortment strategies and the balance of power within producer-retailer relationships. She is research director at PSAE and also a member of several French governmental organizations such as the "Observatoire de la formation des prix et des marges" or the "Comité des règlements des différends agricoles". She is often involved in the public debate regarding the regulation of producer and retailer relationships. For instance, together with Marie-Laure Allain and Stéphane Turolla (who are also involved in the PARETO project), she has published a report for the Ministry of Economics in 2016 (Emmanuel Macron at the time) on the reform that rescinded a ban on input price discrimination in France.⁵ She has been involved in several projects and has previously coordinated an ANR-DFG project from 2013 to 2016 with DICE researchers, Hans-Theo Normann and Christian Wey, on "Competition and Bargaining in Vertical Chains".

French team: The French team has 11 participants with a good balance in terms of research experience: 3 research directors, 6 researchers or assistant professors and two PhD students. Most researchers belong to INRAE, the National Institute of Research in Agronomics and Environment, which explains the French team's excellent knowledge of the retail grocery market and the relationships between retailers and suppliers in the agro food chain. The other French researchers come from various public institutions such as Université de Caen, CREST and Ecole des Mines. The French team also includes leading researchers in the field of IO as external members: we expect scientific feedback from Prof. Patrick Rey (TSE-R) and Laurent Linnemmer (CREST). The other external members are the Vice President of the Competition

⁵ See <https://www.economie.gouv.fr/files/files/PDF/RapportComplet-LME-19-dec-def.pdf>.

Authority, Thibaud Vergé, and Anne Perrot, Inspectrice générale des finances (missioned by the Ministry of Economics to evaluate public policies), who will bring extremely valuable input in terms of discussions.

In terms of scientific competencies, we are all researchers in the field of IO, with excellent skills regarding structural demand estimation (Bonnet, Molina), ex-post evaluation of public policies (Rickert, Tuolla), and with core competencies in the theoretical (Allain, Chambolle, Christin) and structural econometrics analysis of vertical relationships (Bonnet, Molina).

German team: The German team consists of 11 researchers with a good balance of research experience: 4 professors, 4 assistant professors, 2 post docs and 1 current PhD student (who will have completed his dissertation by the start of this project.) We aim to hire 2 more PhD candidates if the project is approved. The majority of the team is part of the Düsseldorf Institute for Competition Economics (DICE) and is focused on empirical work, thereby complementing the considerable theoretical expertise available at INRAE. A particular strength of the team is the expertise in the estimation of market power based on the production function approach (Stiebale), as well as static and dynamic modeling of entry and product positioning (Yan, Yontcheva). Furthermore, the team has made considerable methodological contributions to the estimation of demand (Döpfer, Grigolon, Heiss, Romahn, Stiebale). In addition to this expertise, the team also has members who specialize in the use of reduced form models for causal inference (Lichter). The team is supported by leading theoreticians in the field, who will attend the workshops and offer valuable advice on the research conducted within the project and also contribute directly to specific tasks (Gaudin, Schutz).

The franco-german team is not perfectly gender balanced given that, in the area of research in economics, there is a general unbalance. There are 6 women and 16 men which means about 27.2% of women. This proportion reflects well the average female presence in research in economics (32.4% in France, and 25% in Germany, <https://ideas.repec.org/top/female.html>). Note that two among the three PIs of the project are women and the share of females in our team is above the average female presence in the field of IO (20.9% in IO, <https://ideas.repec.org/top/female.html#field>).

2.2. Resources used and requested to achieve the objectives

German team:

Basismodul: Personalkosten

Stiebale, Joel: applies for one position of a doctoral researcher or comparable (75%) covering the entire project period of 36 months. It is intended to recruit a researcher with a master degree in economics who has experience in the area of empirical research. The researcher will be employed at the Düsseldorf Institute for Competition Economics at the Heinrich-Heine-University in Düsseldorf and will participate in the doctoral program at DICE under the supervision of Joel Stiebale. This doctoral researcher will be responsible for work with the AfID data and implementing the production function approach to markup estimation.

Yontcheva, Biliana: applies for one position of a doctoral researcher or comparable (75%) covering the entire project period of 36 months. It is intended to recruit a researcher with a master degree in economics who has experience in the area of empirical research. The researcher will be employed at the Heinrich-Heine-University in Düsseldorf and will participate in the doctoral program at DICE under the supervision of Biliana Yontcheva. This doctoral researcher will be responsible for work with the AiMark data and the implementation of demand and entry models in the context of the proposed research.

Personnel costs amount to 333 450 Euro (2x166 725 Euro per PhD student).

Basismodul: Sonstige Kosten

We plan to buy a new household scanner dataset managed by AiMark (see <https://aimarkorg.wordpress.com/support-to-academics/> for details). As stated on the website, although the data is in principle provided at no cost, there are still significant costs associated with making the data accessible to researchers for which we have to reimburse AiMark. This is a combination of datasets provided by GfK, Kantar, IRI and others. We will only buy the data for Europe to perform the projects relying on comparisons between European countries and comparisons between France and Germany more particularly. The data identifies the UPC code of the product, the zip code of the household, as well as the retailer at which the product was purchased.

We have applied to obtain the data set with a short description of all the projects that will be using Aimark dataset and the total amount should be 60 000 Euro that we have decided to split in between the two groups of researchers. The total is thus 30 000 Euro for the German team.

Basismodul: Reisekosten

We also apply for travel expenses of 2 500 Euro per PhD student and 2 000 Euros per project participant on the German team employed outside DICE, which will allow participation in international conferences and research visits at DICE for the external project partners.

Modul Projektspezifische Workshops

In addition, we plan a 10 000 Euro budget to finance one or two annual workshops. This amount will cover the accommodation of the participants, as well as the travel expenses and accommodation of external guests who will be invited to our events.

French part:

The French team requests funding that will be shared by the three INRAE team partners: Paris Saclay Applied Economics (PSAE), Toulouse Schools of Economics (TSE-R) and SMART. The expenses of the participants from CREST will be covered by the grant allocated to PSAE, those of the participants from Ecole des Mines by the grant allocated to TSE-R and those of the participants from Université de Caen by the grant allocated to SMART.

Partner 1: Paris Saclay Applied Economics (PSAE)

Personnel costs

We ask for funding for a 12 months postdoctoral position with international experience. This postdoctoral position will be used for project 2 in Task 1 of WP4. We also ask for a 12 month CDD Research engineer aiming to finance either a fourth year of PhD to Sébastien Cerles or a year of postdoc if he defends his PhD in time. Sébastien Cerles has a 3-year funding at INRAE that will end in December 2025. He is involved in Task 2 of WP1. We also plan to recruit an intern for 6 months to help prepare the data for project 1 in Task 1 of WP3.

The total cost (including social costs) of one month of postdoctoral position with international experience at INRAE is 4472 Euros. The total cost of one month as a CDD Research Engineer at INRAE is 4088 Euros. The monthly cost to hire a research assistant (internship) is 560 Euros. Total costs: $12 \times 4472,2 + 12 \times 4088,6 + 6 \times 560,5 = 106\,092$ Euros.

Costs of instruments and equipment

We budget one computer per participant for a budget of 1500 Euros per unit. As there are 5 participants involved in the project at PSAE, the total amount is 7500 Euros.

Costs of service providers (and intellectual property rights)

We plan to buy a new household scanner dataset managed by AiMark (see <https://aimarkorg.wordpress.com/support-to-academics/> for details). As stated on the website, although the data is in principle provided at no cost, there are still significant costs associated with making the data accessible to researchers for which we have to reimburse AiMark. This is a combination of datasets provided by GfK, Kantar, IRI and others. We will only buy the data for Europe to perform the projects relying on comparisons between European countries and comparisons between France and Germany more particularly. The data identifies the UPC code of the product, the zip code of the household, as well as the retailer at which the product was purchased. It will be used in particular for the first project in task 1 of WP1 but also for the project 1 in task 1 of WP3. We have applied to obtain the data set with a short description of all the projects that will be using Aimark dataset and the total amount should be 60 000 Euros that we have decided to split in two between the French and German teams. The total is thus 30 000 Euros for France.

Besides, some projects will use Kantar data that are bought by INRAE. These data contain more precise information on French households and a broader range of products sold in France than the AiMark dataset and will be used in particular for project 1 of Task 2 in WP2. We need to provide a contribution for the purchase of the Kantar database to our lab when using it for a project and therefore plan an additional expense of about 20 000 Euros.

Additional general expenses and other operating costs

Travel expenses of permanent and non-permanent project staff are set to 6000 Euros per participant, for the 5 participants. That represents an amount of 2000 Euros a year which will

allow the participation in the annual workshop of the project and a participation in an international conference. The total travel expenses therefore amounts to 30 000 Euros.

In addition, we plan a 10 000 Euros budget to finance one or two annual workshops for travel expenses of external guests that will be invited to our events.

Partner 2: SMART, Rennes

Costs of instruments and equipment

We budget one computer for each of the 3 participants for a total amount of 4500 Euros.

Costs of service providers (and intellectual property rights)

The project by Avignon and Turolla requires the use of the CASD data. It will use balance sheet information at the firm-year level such as wages, materials costs and investment. This information is recorded in the FICUS-FARE surveys that cover the universe of French manufacturing firms. These surveys are administered by the French National Institute for Statistics and Economic Studies (INSEE) and the access to the data is available by means of a secure data hub managed by the CASD (<https://www.casd.eu/>). The total amount for the data is 18 000 Euros.

Additional general expenses and other operating costs

Travel expenses of permanent project staff are set to 6000 for each of the 3 participants, for a total of 18 000 euros.

Partner 3: TSE-R

Personnel costs

We ask for a 12 month CDD of a research engineer either to finance a 12 month extension of doctoral position (a fourth year) to a PhD student, Maxime Tranchard, or a year of postdoc if he defends his PhD in time. Maxime Tranchard has a 3-year funding at TSE-R that will expire in December 2024. He will work on Task 2 of WP1 as part of his PhD research. We also plan to use a research assistant to help prepare the data for 6 months for project 1 in Task 1 of WP4.

The total cost of a one month Research engineer at TSE-R is 4047 Euros. The monthly cost to hire a research assistant (intern) is 560 Euros. Total costs: $12 \times 4047,67 + 6 \times 560,5 = 51\,935$ Euros.

Costs of instruments and equipment

We budget one computer for each of the 3 participants for a total amount of 4500 Euros.

Additional general expenses and other operating costs

Travel expenses of permanent project staff are set to 6000 for each of the 3 participants, for a total of 18 000 Euros.

Summary of the funding request: resources requested for each major item of expenditure and each partner.

French team		German team	
Personnel costs	158 027	Basismodul: Personalkosten	333 450
Costs of instruments and equipment	16 500	Basismodul: Wissenschaftliche Geräte	
Costs of service providers (and intellectual property rights)	68 000 (Cost for data: French share access to Aimark data, Kantar data and CASD)		
Additional general expenses and other operating costs	Travel: 66 000	Basismodul: Reisekosten	11 000 (2 500 per PhD student, 2 000 for each external collaborator)
	Workshop Accommodation: 10 000	Basismodul: Sonstige Kosten	30 000 (German share of costs for access to AiMark data)
		Modul Projektspezifische Workshops	10 000
	Environmental/management and structural costs*: 43 001		<i>Do not include the fixed supplement ("Programmpauschale") paid by DFG</i>
French total	361 528€	German total	€ 384 450
GRAND TOTAL	745 978€		

* For marginal-cost beneficiaries, these costs correspond to a fixed amount of 13% of eligible expenditure (excluding environmental costs), capped at the amount of the grant allocated. For full-cost beneficiaries, these costs are calculated: on one hand, based on personnel costs, capped at 68% of these personnel costs; on the other hand, based on non-personnel costs, capped at 7% of these costs (excluding environmental costs).

3. Impact and consequences of the project

The French-German collaboration is central for three reasons. First, at least one project in each WP relies on an effective collaboration between researchers from the two countries. The PARETO project will facilitate these collaborations, helping to fund trips and joint workshops. Second, the PARETO project will help us finance the Aimark database that will allow collection of data for several countries, among which Germany and France. For several projects, we plan to compare the research results for these two countries which is particularly relevant given that public policies in France are often discussed with respect to public policies adopted in Germany and vice-versa. Finally, we also plan to finance, thanks to the PARETO project, visiting sessions for doctoral students on both sides, German PhD students visiting French labs and French students visiting German labs, which will provide them with a precious international experience for the job market.

As outlined in the presentation of the consortium, multiple methodological complementarities exist between the two teams, which will contribute substantially to the quality of the research.

All project members aim to publish their work in top-ranked international economic reviews. We also plan to contribute to different newsletters, in order to communicate our research results and contribute to the public debate, such as the columns VoxEU <https://cepr.org/voxeu/columns> published by the Centre for Economic Policy Research, French policy notes published by Institut des Politiques Publiques, <https://www.ipp.eu/publications/notes-ipp/> and Telos <https://www.telos-eu.com/fr/economie/>, as well as German equivalents such as the Policy brief of DICE <https://www.dice.hhu.de/en/research-dice/dice-policy-brief>.

All members of the project will present their research at international IO conferences, such as the conference of the European Association of Research in Industrial Economics (EARIE) that takes place every year in a European country or the annual International Industrial Organization conference (IIOC) in the US. We also aim to present our research papers at smaller specialized conferences and workshops including the CEPR IO conference and the Annual Meeting of the Industrial Economics Committee of the German Economic Association. Finally, we will present at competition policy oriented conferences, such as the CRESSE Conference which deals with competition and regulation issues.

Thanks to the PARETO project, we will organize annual workshops taking place either in Paris or in Düsseldorf to gather all members of the French and German teams. We will also invite external contributors involved in governmental institutions or competition authorities and distinguished researchers working on related topics to get feedback on our methods, results, and policy implications. We will plan round table debates around policy issues such as fighting against inflation, the trend towards rising markups in the EU, the regulation of producer-retailer relationships, and health policies to improve consumers' diet. Participants in these events will include not only distinguished experts in the field, but also young researchers (doctoral students, postdocs) from France and Germany who work on related topics.

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