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Abstract book

44th Conference of the European Association for Research in Industrial Economics

EARIE2017.ORG

Dear participant of EARIE 2017,

We hope you enjoy your stay at the 44th EARIE conference in the city of Maastricht, the Netherlands. This document contains the abstracts of all the contributed and rising stars session presentations. They are listed according to the order of appearance in the conference programme book. For searching within this document, you can use the standard pdf search options like CTRL-F. In case of questions, please do not hesitate to contact us.

Best wishes,

The Local Organizers of EARIE 2017 Maastricht:

Martin Carree (chair)
Iwan Bos
Ronald Peeters
Adela Buttolo

Parallel sessions / Thursday 31 August 2017 / 14:30 – 16:00

Price Signaling and Information Acquisition

Nicolas Figueroa (Pontificia Universidad Catolica de Chile)
Carla Guadalupi (Universidad de las Islas Baleares)

We study a market in which the buyer has no information about product quality, while the seller has private probabilistic information about it. Buyers observe the price and can procure an inspection, which provides valuable information about the good for sale. With costless inspections, there is no separating equilibrium. We then show that when information acquisition is costly, there is a separating equilibrium that satisfies the intuitive criterion, in which high prices signal high quality: a high price is an invitation to inspect and inspections are more costly for low-quality sellers. Finally we discuss the implications of time-on-the-market on separating equilibria. Specifically, when there is only one asset on sale over both periods (therefore both price and time-on-the-market may signal quality) there is no separating equilibrium even if single-crossing is satisfied. The key to this result is that the second-period buyer cannot observe why the asset did not sell in the first period. Notably, the failure to sell can be attributed to overpricing or an unfavorable inspection outcome. Therefore the copycat behavior is more attractive to the poor-quality seller because he benefits more from an increase in buyer beliefs than his high-quality counterpart. Allowing only the first-period buyer to acquire information on quality, we show the existence of a separating equilibrium in which high prices and time-on-the-market signal high quality.

What’s in a Name? Reputation and Monitoring in the Audit Market

Somdutta Basu (EconOne Research)
Suraj Shekhar (University of Cape Town)

We demonstrate a tension between monitoring and reputation incentives when moving from collective reputation environments to individual reputation environments by analyzing a new rule. After January 2017, the name of the engagement partner has to be disclosed in all audit reports issued in the USA. We study the resulting change in auditor incentives and show that while the consequent higher reputation incentives can improve audit quality, partners have a lower incentive to monitor other partners when names are disclosed. This may lead to a fall in audit quality when the rule is implemented. We present several solutions to this problem.

A Simple Model of Competitive Testing

Boris Ginzburg (Universidad Carlos III de Madrid)

A number of contestants are competing for a prize. Each contestant has a type, which is his private information. The prize is allocated by a decision-maker, who would like to give it to the contestant with the highest type. Each contestant can take a costly test that reveals his type. I show that, as the number of contestants increases, the decision-maker becomes more informed when the cost of the test is high, and less informed when the cost is low. Making the test more noisy makes it more likely that contestants take the test. Finally, as long as the number of contestants is sufficiently large, it is not optimal for the decision-maker to make the test compulsory.

Consumer Stockpiling and Sales Promotions

Anna Lu (DIW Berlin)

In retailing markets of storable goods, consumer behavior is typically characterized by stockpiling. While existing research has developed rich models for such strategic consumer behavior, little is known about how sellers should ideally respond to it. In this paper, we provide insights into how frequency and depth of promotions affect consumer purchases and seller revenues in the long run. We show an application to the U.S. market for laundry detergent. We use estimates from a structural dynamic demand model to simulate different pricing policies and find that in the detergent market an increase in promotion depth is more effective than a change in promotion length. Our results suggest that this finding can be translated to markets with a large heterogeneity in storage costs and steady consumption rates.

Targeted advertising and costly consumer search

Roberto Burguet (Institute of Economic Analysis (CSIC))
Vaiva Petrikaite (IAE (CSIC) and Barcelona GSE)

We study a market with horizontally differentiated products and sequential consumer search. Firms send adverts to consumers to inform about their existence. Advertising may be either random or targeted. Targeting increases search intensity, which intensifies competition. However, targeted consumers draw higher valuations on average, which creates incentives to raise prices. The first effect dominates when search costs are sufficiently low, but the second may prevail when search costs are high. As a result, with high search costs, targeting results in higher prices and lower consumer surplus, while the opposite holds true when search costs are low. A larger advertising cost helps firms segment the market if they can target adverts.

Product Offerings and Pricing in a Market with Positional or Status Effects

Eleftherios Zacharias (Athens University of Economics and Business)
George Deltas (University of Illinois)

We consider consumers who care whether a product they own is better than that of other consumers, and who also care whether other consumers have a better product than them. A single product monopolist offers a lower quality product in a market with such status effects. Product price, holding quality fixed, is higher when status matters; however, product quality may be sufficiently lower so that equilibrium price also declines when status matters. Status effects can induce a firm that would have otherwise produced only one product to now produce two, one of high and one of low quality. The high quality product becomes more exclusive as status effects become more important: its price increases and its share of total sales declines; in contrast, the low quality product has a constant price but increasing market share. Consumers who do not have status considerations becomes worse off when the rest of the market does, except if the firm introduces a second product, when some such consumers become better off.

The optimal pricing scheme when the consumer is habit forming

Eleftheria Triviza

This article analyses how consumers' habit formation affects firms pricing policy. Sophisticated and naive consumers are considered. The former realize that their current consumption will affect future consumption, the latter do not. Our main result, both with symmetric and asymmetric information, is that under naive habit formation, the optimal pricing pattern is a three part tariff, namely a fixed fee, an amount of units priced below cost and after their end pricing above marginal cost. Different from Grubb (2009), we claim that only one mistake, in our case underestimation of future demand, is sufficient for three part tariff to be optimal.

Preferences and Decision Support in Competitive Bidding

Nicolas Fugger
Philippe Gillen (ZEW)
Alexander Rasch (Duesseldorf Institute for Competition Economics, University of Duesseldorf)
Christopher Zeppenfeld (University of Cologne)

We examine bidding behavior in first-price sealed-bid and Dutch auctions, which are strategically equivalent under standard preferences. We investigate whether the empirical breakdown of this equivalence is due to (non-standard) preferences or due to the different complexity of the two formats (i.e., a different level of mathematical/individual sophistication needed to derive the optimal bidding strategy). We first elicit measures of individual preferences and then manipulate the degree of complexity by offering various levels of decision support. Our results show that the equivalence of the two auction formats only breaks down in the absence of decision support. This indicates that the empirical breakdown is caused by differing complexity between the two formats rather than non-standard preferences.

Price-cost margin and bargaining power in the European Union

Ana Soares (Banco de Portugal)

This paper documents the size of product and labour market imperfections in the European Union (EU) within narrowly defined sectors including services, which are virtually undocumented. We provide estimates for the price-cost margin and the workers' bargaining power for 11 countries of the EU using firm-level data for the 2004-2012 period. Our findings suggest that perfect competition in both product and labour markets is widely rejected across sectors. Our findings point to the presence of sizeable differences for the price-cost margin and the workers' bargaining power both within and across countries. We show that product and labour market imperfections are strongly positively correlated and that the market power of the firm is substantially underestimated by dismissing the degree of rent sharing with their workers. Moreover, we find a very limited adjustment of both product and labour market imperfections following the international and financial crisis.

On the countervailing power of large retailers when shopping costs matter

Shiva Shekhar (Dusseldorf Institute of Competition Economics)

We consider a set-up with vertical contracting between a supplier and a retail industry where a large retailer competes with smaller retailers that carry a narrower range of products. Consumers are heterogeneous in their shopping costs; they will either be multistop shoppers or one-stop shoppers. The countervailing power of the large retailer is modeled as a threat of demand-side substitution. We show that retail prices are higher, and industry surplus and social welfare fall, when the large retailer possesses countervailing power. Increasing

marginal wholesale prices discourages multistop shopping behavior of consumers, making demand substitution less attractive for the large retailer.

Multi-Product Bargaining, Bundling, and Buyer Power

Markus Dertwinkel-Kalt (University of Cologne)
Christian Wey (Heinrich Heine University Düsseldorf)

We re-consider the bilateral bargaining problem of a multi-product, manufacturer-retailer trading relationship. O'Brien and Shaffer (2005) have shown that the unbundling of contracts leads to downward distorted production levels if seller power is strong, while otherwise the joint profit maximizing quantities are contracted (which is also always the case when bundling contracts are feasible). We show that the unbundling of contracts also leads to downward distorted output levels when the buyer firm has sufficient (Nash) bargaining power (i.e., buyer power). Our result is driven by cost substitutability (diseconomies of scope).

Cartel dating

Peter Boswijk (University of Amsterdam)
Maurice Bun (University of Amsterdam)
Maarten Pieter Schinkel (University of Amsterdam)

The begin and end dates of cartels are often ambiguous, despite competition authorities stating them with precision. The legally established infringement period(s) from documentary evidence need not coincide with the period(s) of actual cartel effects. In this paper, we show that misdating cartel effects leads to a (weak) overestimation of but-for prices and an underestimation of overcharges. Total overcharges based on comparing but-for prices to actual prices are a (weak) underestimation of the true amount overcharged, irrespective of the type and size of the misdating. The bias in antitrust damage estimation based on predicted cartel prices can have either sign. We extend the before-during-and-after method with an empirical cartel dating procedure that uses multiple structural break tests to determine the actual begin and end date(s) of the effects of collusive agreements. Empirical findings in the European Sodium Chlorate cartel corroborate our theoretical results.

Collusive Benchmark Rates Fixing

Nuria Boot (KU Leuven and DIW)
Timo Klein (University of Amsterdam)
Maarten Pieter Schinkel (University of Amsterdam)

The fixing of benchmark rates such as Libor, Euribor and FX has proven vulnerable to manipulation. Individual rate-setters may have incentives to fraudulently distort their submissions. For the contributing banks to collectively agree on the direction in which to rig the rate, however, their interests need to be sufficiently aligned. In this paper we show how a continuous benchmark rates cartel could be sustained by preemptive portfolio changes. Exchange of information facilitates front running that allows members to reduce conflicts in their trading books. Designated banks then engage in eligible transactions rigging to justify their submissions. As the cartel is not able to always find stable cooperative submissions against occasional extreme exposure values, there is episodic recourse to non-cooperative quoting. The benchmarks remain vulnerable to these cartel mechanisms, also after the implementation of recent and proposed reforms. It is not obvious how to

make them more resilient to collusion. Periods of heightened volatility in the rates can be indicative of collusion.

Collusion in two-sided markets

Yassine Lefouili (Toulouse School of Economics)
Joana Pinho (CEF.UP and Faculdade de Economia. Universidade do Porto)

We investigate the incentives for two-sided platform to collude in prices. We take the Armstrong (2006) model as a stage game of an infinitely repeated game, and characterize the most collusive agreement when platforms cooperate in the two sides of the market and when they only cooperate in one side. If coordination is costless, platforms can always sustain supra-competitive profits in both collusive scenarios. Under two-sided collusion, platforms increase the price on the two sides of the market, implying that agents on both sides become worse off due to collusion. In addition, the most collusive profit decreases with the strength of the network externalities if and only if platforms are not sufficiently patient to sustain prices at the monopoly level. When platforms only collude on one side of the market, it may be the case that the price on one side of the market is below the competitive price (while the other price is above). As a result, one-sided collusion may leave agents on side of the market better off. When there a sufficiently high coordination cost, platforms may prefer not to collude and collusion may become more likely to arise when network externalities

Product Choice and Price Discrimination in Markets with Search Costs

Natalia Fabra (Universidad Carlos III de Madrid)
Juan Pablo Montero (PUC Chile)

In a seminal paper, Champsaur and Rochet (1989) showed that competing firms choose non-overlapping qualities so as to soften price competition at the cost of giving up profitable opportunities to price discriminate. In this paper we show that an arbitrarily small amount of search costs is enough to give rise to an equilibrium with overlapping qualities. In markets with search costs, competing firms face the monopolist's incentive to price discriminate, which induces them to offer the full quality range even if this forces them to compete head-to-head. Hence, even though search costs increase prices and reduce consumers surplus for given quality choices, search costs can also lead to lower prices and higher consumer surplus whenever they induce firms to offer broader and overlapping product lines. Our analysis also provides predictions regarding pricing by multi-product firms in markets with search costs under various retail market structures. Product choices and pricing by online bookstores motivate our findings.

It's Good to be Bad: A Model of Low Quality Dominance in a Full Information Consumer Search Market

Stuart Baumann (University of Edinburgh)
Margaryta Klymak (Trinity College Dublin)

This paper examines a consumer search market exhibiting vertically differentiated firms, heterogeneous consumers and endogenous consumer market entry. In an asymmetric information setting high and low quality firms make equal sales and profit in this market. Conversely when there is full information, search frictions induce an unravelling mechanism that leads to a unique refined equilibrium where all consumers approach low quality firms and high quality firms make no sales or profit. This presents a rationale for why low quality firms may disclose their quality and high quality firms may not even when disclosure is costless.

Quality Provision and Welfare in Search Markets

Jose L. Moraga-Gonzalez (VU Amsterdam)
Yajie Sun (Vrije Universiteit Amsterdam)

We study the market provision of quality and welfare in a consumer search market. Products can be of high- or of low-quality. Firms that pay an investment cost are more likely to offer high-quality products. With higher search costs, the gains from investing in high-quality increase and the market equilibrium has more high-quality firms. In spite of this beneficial aspect of higher search costs, consumer surplus decreases as search costs rise. From the collective point of view of the firms, an individual firm invests too much in quality; from the standpoint of consumers, firms invest too little. It turns out that the market over-provides quality on welfare grounds when the search cost is low, while it under-provides quality when the search cost is high.

Consumer Preferences for Product Updates Under Digitization: A Model of Demand for Smartphone Applications

Benjamin Leyden (University of Virginia)

The digitization of durable goods gives firms the ability to monetize and update already purchased products, shifting firms' focus from pushing consumers toward buying replacement products to locking in consumers through incremental updates. As a first step in understanding the effects of digitization, I investigate consumers' preferences for product updates in Apple's app ecosystem. Using a demand model that differentiates between large, feature-adding updates, and smaller, bug-fixing updates, I find that consumers dislike paying for apps, but conditional on paying, price sensitivity is low. Updates have a positive, non-transitory effect on demand, and consumers do not differentiate between update types.

The Need for Accurate Approximation in Random Coefficient Logit Models Using Aggregate Data

Daniel Brunner (University Düsseldorf)
Florian Heiss (University of Duesseldorf)
André Romahn (University of Düsseldorf)
Constantin Weiser (Heinrich-Heine University Düsseldorf)

Using data on the U.S. automobile market, we show that the reliability of the estimates and economic predictions of the differentiated products demand model of Berry, Levinsohn and Pakes (1995) hinges on the approximation accuracy of the model's simulated aggregate market share function. With few simulation draws, the approximation error overwhelms the estimator's asymptotic properties. This yields many local minima in the objective function with widely varying outcomes. The estimator also becomes highly sensitive to the specific combination of starting guess, optimization algorithm and inner convergence threshold. With a sufficient number of simulation draws these numerical instabilities disappear and the estimator delivers tightly clustered estimates and implied economic predictions. The required number of simulation draws is roughly in line with the asymptotic results from Berry, Linton and Pakes (2004).

Do the rules of the game determine who is playing? Institutional Change, Entrepreneurship and Human Capital

Luca Grilli (Politecnico di Milano)
Boris Mrkajic (Politecnico di Milano)
Emanuele Giraudo (Politecnico di Milano)

Prior research shows that entrepreneurship enhances economic development. However, it is becoming increasingly evident that it is not the number of new startups that matters for that goal, but rather their quality. This paper studies whether institutional change can facilitate the transition from quantity toward quality of entrepreneurship. In particular, we investigate the effect of the Italian policy intervention targeting Young Innovative Companies (YICs) on the human capital of entrepreneurs, and how that influences entrepreneurial performance. We exploit a quasi-natural experiment setting and analyze founders of 1,787 YICs founded before and after the Law no. 221/2012 reform, by breaking down the impact of lowering entry and growth barriers. The findings indicate that the reform in general, but more importantly, lowering growth barriers attracts founders endowed with the most valuable, specific experience (experience in the same sector and/or management functions). Furthermore, while the reform impacts positively the performance of all startups, the ones founded by highly skilled individuals are able to capitalize on it the most.

Necessity Entrepreneurs: General Equilibrium Theory of Occupational Choice under Uncertainty

Alexander Shapoval (New Economic School)
Dmitry Pokrovsky (Higher School of Economics)

The aim of this paper is to model the occupational choice under uncertainty. We assume that individuals made their occupational choice comparing their expected after-tax profit as entrepreneurs and their expected income as job market candidates. The uncertainty disappears through learning by doing. Entrepreneurs reveal their entrepreneurial abilities when running a firm. The result of the competition between demand and supply on the labor market also becomes known. If demand prevails over supply then the paid employment is the alternative to entrepreneurship; otherwise, unemployment is. Observing variables that have been uncertain earlier, individuals alter their occupational choice if the alternation gives them a higher income. In order to separate the role of uncertainty, we simplify the description of the labor market assuming that workers are homogeneous. This assumption equalizes wages. We claim that in equilibrium, more talented entrepreneurs earn more than workers, whereas the after-tax profit of less talented entrepreneurs fills in the income gap between the unemployment benefit and the after-tax wages. These less talented entrepreneurs are naturally interpreted as necessity entrepreneurs. They are forced into entrepreneurship, as the demand for labor is fully satisfied and they are not able to get a job offer. Heterogeneity of entrepreneurs induces heterogeneity of firms' size. Predictably, more talented entrepreneurs organize larger firms. Uncertainty on the labor market is crucial in our explanation of the necessity entrepreneurs. Uncertainty in individuals' entrepreneurial abilities is added to make the model more realistic. We assume that individuals have correct but vague judgments regarding their entrepreneurial abilities. In more details, the initial occupational choice is made by each individual under knowledge of all individuals' true distribution of abilities and her own distribution of abilities. If an individual runs a firm, she reveals that her abilities coincide with the value considered initially as the expected abilities. We address the question how the degree of vagueness affects equilibrium. We argue that a part of such entrepreneurs enters the labor market at the initial occupational choice and gets a job offer. The lesser this part is, the stronger the economy benefits, as the number of entrepreneurs enlarges. In the framework of our model, individuals overestimate their entrepreneurial profit. If the degree of vagueness increases, the overestimation enlarges. Then a larger part of potential necessity entrepreneurs avoids the labor market at the initial occupational choice and eventually does become entrepreneurs.

Innovative competences and firm-level productivity in Denmark and Finland

Carter Bloch (Aarhus University)
Carita Eklund (Aarhus University & University of Vaasa)
Janne Huovari (Pellervo Economic Research PTT)
Hannu Piekkola (University of Vaasa)

This paper examines how intangible assets affect firm-level productivity in the small open economies Denmark and Finland in 2000–2013. We estimate firms' total factor productivity and the contribution of intangible assets (ICT, R&D and organizational competencies) to firm productivity. Advanced economies have been under pressure from demand shifts, from competition increased by globalization and from severe conditions due to the financial crisis. We examine whether the role of intangible assets has changed over time, from the period of fairly stable growth prior to the crisis in 2008 to the more difficult period of recovery afterwards. The productivity analysis is conducted in two stages. In the first stage we estimate total factor productivity, while the effects of intangible competencies are estimated in the second stage. In addition, we explicitly model the company's decision to invest in these intangible assets. Our approach, which is based on occupational classifications using linked employer-employee data, constructs measures of three types of intangibles: R&D assets, organizational assets and ICT assets. The findings imply that organizational competences have been higher in Denmark but the benefits from them are growing in Finland. Firms in both countries had a positive and significant elasticity of R&D assets with respect to productivity, which was somewhat lower in the recovery period. In contrast, elasticities of ICT assets are higher in the recovery period compared to before the crisis.

Academic engagement with industry: implications for scientific productivity and research agenda composition

Maikel Pellens (ZEW Mannheim)

We investigate the effects of industry engagement of academic researchers. Based on survey data of German professors from all sciences and engineering, we show that industry funding relates with a stronger orientation of the research agenda towards industry. Concretely, they are more likely to consider industry a main user of their research, to develop their research agenda along potential for knowledge transfer activities, and to indicate that they would have new research topics funded by industry. Our findings indicate that the current trend towards more intense industry funding of research might influence the long-term development of scientific knowledge.

The Role of Public Research for Innovation Performance in New Technology Based Firms

Roman Fudickar (Technical University Munich)
Hanna Hottenrott (TUM)

Assessing the economic impact of publicly funded research is of great interest to science and innovation policy. Knowledge flows from public research to new firms' innovation activities increase the returns to public research funding through publications, patents, and researcher mobility as well as through direct interactions between founders and researchers at public research institutions. New technology-based firms are generally praised for their high innovation potential despite resource challenges and liability of newness. This study shows that new technology based firms benefit from direct interactions with research institutions in terms of radical innovation outcomes. In a large sample of NTBFs founded in Germany between 2001 and 2006, those firms engaging in knowledge exchange with research institutions on a continuous basis are more likely to

introduce new products and services to the market. The returns to formal knowledge interactions are higher for NTBFs that conduct R&D internally suggesting that absorptive capacity matters. For non-R&D performers the benefits from informal interactions are higher than for firms with own R&D and even higher if they also engage in formal interactions.

Public procurement as policy instrument for innovation

Dirk Czarnitzki (KU Leuven)
Paul Hünermund (Centre for European Economic Research)
Nima Moshgbar (KU Leuven)

During the last decade, policy makers discussed the potential of public procurement as instrument in the area of technology policy. As a consequence, the European Commission has recently passed a new legislation that explicitly allows to include R&D and innovation components within public procurement contracts. Germany has implemented this new legislation from 2009 onwards. Consequently, we evaluate the potential of public procurement for innovation empirically. We estimate the average treatment effect on the treated (ATET) of innovation-directed public procurement on German firms' share of sales of innovation and imitation using the German data of the Community Innovation Survey (CIS). We apply cross-sectional OLS regressions, Matching, IV regression as well as difference-in-difference estimators with panel data. Interestingly, we find that firms with such procurement contracts indeed sell more innovative products than other firms. However, these new product sales refer to incremental innovation, i.e. products that are new for the respective firms' product portfolio, but which are not market novelties. We conclude that public procurement may be a powerful policy tool for accelerating the dissemination of new technologies rather than a trigger for original innovation.

Endogenous Consumer Stockpiling and Static Demand Elasticity Biases

Luke Garrod (Loughborough University)
Ruochen Li (Loughborough University)
Chris Wilson (Loughborough University)

Consumers often stockpile goods to store for future consumption. Until recently, most demand estimation methods failed to account for this and so produced biased estimates of demand elasticities. However, little is known about when such biases matter most. This paper develops a dynamic theoretical framework of endogenous consumer stockpiling in a differentiated products market. After deriving explicit equilibrium measures for the associated own- and cross-price elasticity biases, we show that the biases i) can be negligible in markets with relatively low product differentiation, and ii) are positive and increasing in the degree of product differentiation within markets with relatively high product differentiation. These results have significant implications for i) competition policy, ii) tax policy and iii) marketing.

Consistent Conjectures in Differentiated Duopoly with Private Information: Outcome Equivalence and Non-Manipulation of Information

Shinji Kobayashi (Nihon University)

This paper examines consistent conjectures in differentiated duopoly with private information on demand functions. We show that at equilibrium with consistent conjectures, outcomes under quantity strategies are equivalent to those under price strategies. This implies that the choice between Cournot competition and

Bertrand competition is irrelevant for modeling firms' interactions in oligopolistic industries. We also demonstrate that each firm reveals true information about its own demand function at equilibrium with consistent conjectures whereas under Cournot conjectures, each firm has an incentive to overstate its information on demand.

Customer information, price competition and market leadership

Yiquan Gu (University of Liverpool)
Carlo Reggiani (University of Manchester)

The unprecedented access of firms to a large amount of customer level data is altering their strategic incentives in competitive environments. Firms facing price competition usually prefer to be followers to enjoy opportunities of undercutting rival firms. In this paper we show that the availability of customer level information may provide incentives to be the market leader even when facing price competition. The availability of the information can be used strategically to induce a rival firm to raise its prices, hence reducing the incentive to undercut. If a firm has access to information about a relatively large share of the potential customers, firms can coordinate to serve different segments and charge consumers high prices. The result is however overturned if the share of consumers is extremely high, making it too costly for one firm to completely give it up.

Divisibility and irreversibility in duopoly capacity investment

Richard Ruble (EMLYON Business School)

The interaction between the strategic benefit of commitment and the option value of flexibility is studied in a model of investment in unit capacities in which one of the firms in a duopoly takes the capital good to be divisible. In a two-period framework this firm's policy consists of an initial component that positions it strategically and a contingent remainder that accounts for both risk and simultaneous competition, typically resulting in a lower level of pre-commitment than if capital is indivisible. In a continuous time framework divisibility also allows a firm to reduce the magnitude of its pre-commitment by adopting a capital accumulation strategy that durably maintains its rival on the brink of market entry and to ultimately invest at an instantaneously optimal threshold that constitutes a preemption trigger for its rival. When the input price is stochastic, greater input volatility reduces the magnitude of the final jump in the leader's capital.

A general model of price competition with soft capacity constraints

Nicolas Drouhin (Ecole normale supérieure Paris-Saclay)
Marie-Laure Cabon-Dhersin (CREAM, University of Rouen)

We propose a general model of oligopoly with firms relying on a two factors production function. The factors are chosen sequentially. In a first stage, firms choose the level of the fixed factor. In a second stage, firms compete in price, and determine the level of variable factor necessary required to satisfy the whole demand. This setting generalizes the notion of capacity constraint. When the production function allows a certain degree of substitutability, the capacity constraint is "soft", implying a convex and smooth cost function in the second stage. We show that there exists a unique equilibrium prediction for the game, whatever the returns to scale. This equilibrium is characterized by a high level for price. We provide simulations, demonstrating non-standard results on the effects of the number of firms on the market price and welfare.

A Model of Garbage: Price Competition with Unobservable Inventories

Joao Montez (University of Lausanne)
Nicolas Schutz (University of Mannheim)

We study a symmetric duopoly game in which firms build up inventories before setting prices, but inventories remain unobservable. The game has a unique equilibrium, which features three types of distortions: Firms charge positive markups; Firms may refrain from serving the market; Firms tend to produce garbage (i.e., part of the equilibrium output ends up not being sold to consumers). However the equilibrium cannot be improved with taxation. We also show that the equilibrium is robust to perturbations in the information structures and in the economic environment. We study how equilibrium behavior is affected by the extent to which capacity costs are sunk, cost asymmetries, and the presence of captive consumers, showing in particular that the Bertrand arises at the limit when inventory costs become fully variable. Finally, contrary to conventional wisdom, we find that information sharing on inventories can increase social welfare and consumer surplus in the static game, and can also make it harder for firms to collusively obtain the industry monopoly profit in a repeated version of the game.

Higher Minimum Quality Standards and Redistributive Effects on Consumer Welfare

Marco Kotschedoff (Goethe University Frankfurt)

This paper estimates an individual level demand model for animal welfare differentiated eggs with German household data. We evaluate the effect on consumer surplus of a higher minimum quality standard for eggs in terms of animal welfare. Our results show that, on average, households with higher income are willing to pay more for eggs that provide higher animal welfare. While poorer consumers are forced to buy a higher priced alternative or opt out of the market, prices for the remaining higher quality eggs typically fall after increasing the minimum quality standard. As a result consumer welfare is redistributed from low-income to high-income households. This provides evidence for a regressive impact of higher minimum quality standards. In counter-factual scenarios, we estimate the required cost reduction due to efficiency gains or, equivalently, a tailored subsidy in order to offset the regressive effect. As market power increases, the cost reduction must be higher. Finally, we examine hypothetical future scenarios by successively increasing the minimum quality standard until only the highest quality egg alternative remains on the market.

Nonparametric Demand Estimation with an Application to Incomplete Cost Passthrough

Giovanni Compiani (Yale University)

Standard models of demand in IO rely on several parametric assumptions. Building on recent identification results, we develop an estimation procedure that dispenses with parametric restrictions and that, instead, leverages a range of constraints from economic theory. We then apply our procedure to study incomplete cost passthrough. Using US supermarket data, we compare the passthrough elasticity decompositions obtained using standard demand models to the ones obtained using our nonparametric approach. Preliminary results suggest that removing the parametric assumptions affects the importance attributed to different sources of incomplete passthrough, with markup adjustment playing a more substantial role relative to non-traded costs.

Productivity Estimation with Multi-product Plants

Scott Orr (University of Toronto)

A growing body of empirical work has documented substantial heterogeneity across plants and firms, both in terms of efficiency and the quality of products produced. However, there has been very little empirical work documenting within-plant heterogeneity. This is largely due to the fact that the allocation of inputs across production lines within plants are not observed in most plant-level data sets, making standard approaches to productivity analysis infeasible. I develop a methodology to estimate plant-product level total factor productivity (TFP) for multi-product plants, using information on plant-product level prices to recover the equilibrium allocation on inputs across uses within the plant. I then estimate product-level TFP for a panel of manufacturing plants in India from 2001-2008. Consistent with previous literature, I find that multi-product plants tend to have higher revenue-based TFP, as well as quantity-based TFP, compared to single product plants. However, this result is almost entirely driven by the fact that multi-product plants are significantly better at producing one of their core products. I find that multi-product plants are, on average, worse than single product plants at producing their non-core products.

Labor market imperfections, markups and productivity in multinationals and exporters

Sabien Dobbelaere (Vrije Universiteit Amsterdam)
Kozo Kiyota (Keio University)

This paper examines the links between the internationalization of firms and market imperfections in product and labor markets. We develop a framework for modelling heterogeneity across firms in terms of (i) product market power (price-cost markups), (ii) labor market imperfections (workers' bargaining power during worker-firm negotiations or firm's degree of wage setting power) and (iii) revenue productivity. We apply this new framework to analyze whether the pricing behavior of firms in product and labor markets differs across firms that engage in different forms of internationalization. Being an exporter increases the likelihood of being characterized by imperfect competition in the product market while the opposite holds for firms that engage in multinational activities. Exporters are more likely to share rents based on the relative bargaining power of workers and less likely to share rents based on the elasticity of the labor supply facing an individual employer. In contrast, being an MNE is negatively correlated with the likelihood of being characterized by either efficient bargaining or monopsony. Our fixed-effects quantile regression results show heterogeneous effects of being an exporter or an MNE across quantiles of conditional markup, workers' bargaining power or firms' wage-setting power distributions

Optimal reciprocal import tariffs under variable elasticity of substitution

Natalia Aizenberg (Melentiev Energy Systems Institute SBRAS)
Igor Bykadorov (IM SB RAS, NSU, NSUEM)
Sergey Kokovin (Novosibirsk State University, IM SB RAS, NRU Higher School of Economics)

We explore impact of reciprocal import tariffs on welfare in the standard Krugman's one-sector model of international trade with unspecified preferences and variable elasticity of substitution. In the basic setting, any specific tariff is harmful under (realistically) decreasing elasticity of the utility function (DEU), an import subsidy or an export tariff can be welfare-improving, whereas ad valorem tariffs/subsidies are always harmful. By contrast, under sufficiently high transport costs, both kinds of tariffs can become beneficial, because they mitigate the market distortion: insufficient or excessive variety. We perform an attempt to calibrate the mode

Does trade liberalization promote antidumping protection? : A theoretical analysis

Hiroshi Mukunoki (Gakushuin University)

Reducing trade costs by tariff reductions can be overturned if the tariff reductions induce governments to implement “contingent” protections such as antidumping (AD) and safeguard measures. Some empirical papers have shown that a commitment to reducing tariffs leads to more frequent use of contingent protections while other papers have shown that this substitution effect is rarely observed. This paper theoretically explores the conditions under which a lower import tariff promotes the AD actions of the importing country. The results show that the relationship between tariff reductions and AD actions are not monotone, and there is a case where a lower tariff discourages AD actions.

Consumers’ Privacy Choices in the Era of Big Data

Sebastian Dengler (Tilburg University)
Jens Prufer (Tilburg University)

Recent progress in information technologies provides sellers with detailed knowledge about consumers’ preferences, approaching perfect price discrimination in the limit. We construct a model where consumers with less strategic sophistication than the seller’s pricing algorithm face a trade-off when buying. They choose between a direct, transaction cost-free sales channel and a privacy-protecting, but costly, anonymous channel. We show that the anonymous channel is used even in the absence of an explicit taste for privacy if consumers are not too strategically sophisticated. This provides a micro-foundation for consumers’ privacy choices. Some consumers benefit but others suffer from their anonymization.

Privacy and Persuasion: are we getting the best deal?

Elias Carroni (University of Bologna)
Luca Ferrari (University of Firenze)
Simone Righi (University of Bologna)

We shed new lights on the desirability of privacy invasion by web-masters in online markets. We consider website’s users uncertain about their need for a product and advertisers being offered banner spaces to show their commercials. The latter are designed as bayesian experiments. We show the emergence of different types of advertisement, ranging from fully informative to cheap talk. However, fully-informative banners are never showed if users can privately and costly acquire information about their state of necessity.
As a result, when users’ privacy is violated, they buy products they do not need and that they would not have bought if privacy were protected.

User Data, Market Power and Innovation in Online Markets: Evidence from the Mobile App Industry

Reinhold Kesler (ZEW Mannheim)
Michael Kummer (Georgia Institute of Technology and Centre for European Economic Research)
Patrick Schulte (Centre for European Economic Research (ZEW), Mannheim)

We study how developers' access to user data mediates the relationship between market power and product innovation in the mobile app industry. Developers which have high market power (1) might have more access to user data, both through active data collection, which might imply less user privacy, and through data provision by users. These data might then allow developers to generate more successful product innovations. We provide evidence on these questions using data on nearly 2 million apps from Google's Play Store which we obtained on a quarterly basis in 2015 and 2016. We augmented these data with information on apps' privacy-intrusiveness taken from PrivacyGrade.org as well as with information from AppBrain.com covering additional innovation measures and information on code libraries used by apps. First results suggest both a positive relationship between (1) market power and data access and (2) between data access and innovation.

When to patent – A war of Attrition Perspective

Hodaya Lampert (Ben-Gurion U)
David Wettstein (Ben-Gurion University of the Negev)

This paper analyzes the cost of delaying innovative activity due to the patent system. A firm may choose to delay patenting when the cost of the delay in terms of lost revenues and possible depreciation of the patent importance is offset by the increase in revenues due to having less early period innovators to share profits with. We focus on two structures of sequential innovation, a regular and an inverse pyramid. We show that in a two-period model, the delay effect in a regular pyramid is present just in the second period. In the inverse pyramid structure waiting out effects may appear in both periods depending on relative patent values. Furthermore, since a period one firm's profits from period two are larger for more distant patent expiry dates, each firm wishes to delay patenting, possibly leading to a war of attrition scenario. Furthermore, we show that in a regular pyramid, as the value of the innovation in the first period decreases, patent length should be increased. This maybe reverse in the case of inverse pyramid, where a war of attrition may occur.

Long-Run Market Configurations in a Dynamic Quality-Ladder Model with Externalities

Mario Samano (HEC Montreal)
Marc Santugini (University of Virginia)

We analyze the type of market structures that arise in the long-run when quality externalities and asymmetric R&D capabilities exist in the context of a quality-ladder dynamic model. An example of such externalities is a patent release by the leading firm: an improvement of quality of this firm's good affects the quality of the other firms' products. This externality can be thought of as an increase in compatibility in a network. We show that it is possible for this model to generate, in the long-run, multi-modal probability distributions over different market structures from the same parameter values. In some cases, the lagging firm may even become the dominant firm depending on the degree of the externality. This may have implications for the estimation and simulation of this class of models.

Competing with Big Data

Jens Prufer (Tilburg University)
Christoph Schottmueller (University of Copenhagen)

We study competition in data-driven markets, where the cost of quality production decreases in the amount of machine-generated data about user preferences or characteristics. This gives rise to data-driven indirect

network effects. We construct a dynamic model of R&D competition, where duopolists repeatedly determine innovation investments. Such markets tip under very mild conditions, moving towards monopoly. After tipping, innovation incentives both for the dominant firm and for competitors are small. We show when a dominant firm can leverage its dominance to a connected market, thereby initiating a domino effect. Market tipping can be avoided if competitors share their user information.

Parallel sessions / Thursday 31 August 2017 / 16:30 – 18:00

Effects of Ad-Blockers Adoption on Digital Piracy: A 'Blessing' or a 'Curse'?

Bipasa Datta (University of York)
Leonardo Madio (University of York)

This paper studies the effect of ad-blockers adoption on digital piracy in a duopoly market with a legal platform offering video-on-demand services, and a pirate platform relying on advertisement revenues. We show that the effect of ad-blockers adoption on the market structure is sensitive to the type of welfare maximisation problem pursued by the ad-blocker. Our results demonstrate that by partially reducing the level of advertisements, the ad-blocker adoption exerts competitive pressure on the legal firm, shifting some of its pre-adoption demand in favour of the pirate demand (a pro-piracy effect) prompting the legal firm to lower its prices to recover some of its (lost) demand. We further show that when the ad-blocker pursues an unconstrained consumers' surplus maximisation problem, it can either induce a zero level of advertisements or an excessively high level of advertisement both of which induce consumers to use only the legal platform. In this case, the presence of ad-blockers grants a monopoly position to the legal firm. We further discuss various extensions and policy implications emerging from our analysis.

Strategic Whitelisting by an Ad-blocking Technology Provider: Market Outcomes and Welfare Implications

Jan Krämer (University of Passau)
Lukas Wiewiorra (Goethe University Frankfurt)

Ad blocking technology (ABT) is seen as a threat to the advertisement based business models of content providers (CPs) on the Internet. We develop a game-theoretic model to analyze the strategic impact of ABT on CPs' profits. In particular, we investigate market outcomes when the ABT provider offers to whitelist some of the CP's advertisements, i.e., deliberately introduces an imperfect blocking technology in exchange for a share of the CP's (increased) advertisement revenues. We find that providing the ABT for free and generating revenues from whitelisting only may be more profitable for the ABT provider than if it were to sell the ABT software directly to consumers. At the same time, whitelisting yields lower total surplus than if the ABT would filter ads perfectly, which raises the question whether a "neutrality" regulation for dominant ABT providers, similar to a net neutrality regulation for Internet service providers, is warranted.

Regulating Advertising Quantity: How The Policy Affects Consumers and Advertisers?

Jiekai Zhang

EU and UK regulators impose strict regulation on TV advertising quantity today to protect the welfare of TV viewers, while in the US, the Justice Department seems more concerned about the welfare of advertisers and has agreed with the broadcasting industry to eliminate restraints on the duration of television commercials since 1982. How the regulation policy affects consumers and advertisers has not been well understood. This paper investigates the consequence of regulation on TV advertising quantity. To my knowledge, it is the first paper which structurally analyzes this issue within a two-sided market framework. The paper exploits a novel dataset of per hour data on 12 broadcast TV channels in France during one year (2014). I first estimate the demand of TV viewers and of advertisers, which allows me to account for the two-sidedness of the market in

the supply decision of TV stations. I identify the shadow prices of regulation based on the observed regulatory constraints. Finally, I conduct two counterfactual experiments to calibrate the welfare effects of the regulation. My results suggest that regulating advertising quantity is unnecessary on a competitive market, given the two-sided market structure of the broadcast TV industry. However, if TV broadcasters collude on their advertising supply, the regulation can improve upto 5.75% of consumer surplus, but decrease until 4.8% of the industry's profit.

Let's lock them in: Collusion under Consumer Switching Costs

Niklas Fourberg (Duesseldorf Institute for Competition Economics (DICE))

I study consumer switching costs' effect on firms' price setting behavior in a 2x2 factorial design experiment with and without communication. For Bertrand duopolies the price level under consumer switching costs is lower vis-à-vis new consumers but not affected towards old consumers. Markets are overall less tacitly collusive which translates into higher incentives to collude explicitly. Text-mining procedures reveal linguistic characteristics of the communicated content which correlate with market outcomes and communication's effectiveness. The results have antitrust implications especially for the focus of cartel screening.

Collusion under incomplete information on the discount factor

Willy Lefez (TSE)

The gradual increase of prices at the start of collusion is a recurrent pattern that has been observed in many discovered cartels and in lab experiments. This paper seeks to capture this pattern in a model where firms have private information as to their respective discount rate. In a repeated Bertrand pricing duopoly game we show that, in order to maximize their payoffs while preventing low types from mimicking, patient firms adopt a price scheme which feature a transition phase. We determine the best speed of price increase and the delay before which the highest price level is reached.

On Globally Optimal Punishments in the Repeated Cournot Game

Flavio Delbono (University of Bologna)
Luca Lambertini (U Bologna)

We challenge the global optimality of one-shot punishments in infinitely repeated games with discounting. Specifically, we show that the stick-and-carrot punishment à la Abreu (1986) may not be globally optimal. We prove our result by investigating tacit collusion in the infinite repetition of a linear Cournot game. We illustrate the existence of the stick-and-carrot globally optimal punishment for large cartels, and fully characterise it. Then, we show that for small cartels, global optimality may be reached only with two-period punishments.

Planned Opaqueness in Securitization

Takeharu Sogo (Osaka University of Economics)
Keiichi Kawai (UNSW)

Issuers of structured finance products can exploit the informational advantage over potential buyers via two ways. One way is to adopt lax screening standards, and simply pass off the risks to potential buyers. The other way is to make securities intentionally opaque and difficult to evaluate their risks and values through repackaging, and thereby amplifying informational advantage. When the screening standard is exogenously given, repackaging is welfare-reducing. However, we show not only that the issuer chooses to repackage, but also that repackaging mitigates the adverse selection and can be welfare-improving, because the incentive to enjoy additional informational advantage through repackaging improves screening standards.

Net Stable Funding Ratio and Liquidity Hoarding

Martin Windl (University of Augsburg)

The Net Stable Funding Ratio (NSFR) as a component of the Basel III liquidity requirements seeks to limit maturity transformation of banks. This paper deals with the question if this form of regulation also influences liquidity hoarding motives and stability of interbank markets. Therefore the model introduces regulation into a two-period framework with asymmetric information and stochastic credit risk based on Acharya and Skeie (2011). It results that the NSFR increases the bid-ask spread on the interbank market due regulatory costs. Furthermore, institutional observability increases regulatory pressure and decreases liquidity hoarding motives of banks following from asymmetric information.

Incentives for Bankers to Reveal Risk

Swati Kanoria (Warwick Business School)

This paper investigates the remuneration required for bankers to truthfully reveal the risk profile of their asset classes, under information asymmetry, when bankers are more informed than a bank. In an adverse selection canonical model with two discrete banker types, High risk and Low risk, I find that the bank can achieve a positive separation of banker types without leaving any information rent for the banker. The corresponding incentive scheme is a flat fixed wage schedule for the Low risk banker and a bonus for the High risk type. When moral hazard is present and the banker has a choice to exert effort to shift the distribution of returns, the bank leaves an information rent for the High risk banker. The analysis provides a new insight for the debate on bankers' pay in showing that bonuses can be used as a screening device for risk.

Human capital, work organisation and firms' innovation strategies in emerging countries

Claudia Capozza (University of Bari Aldo Moro)
Marialuisa Divella (University of Bari Aldo Moro)

This paper examines the relationship between human capital and work organisation practices with different innovation strategies of firms in emerging countries of Eastern Europe and Central Asia. We go beyond the analysis on the innovation outcome and the traditional dichotomy between product and process innovations. By placing more emphasis on the way innovation is performed, whether in-house, in cooperation, by imitation and adoption, we discriminate between different levels of technological capabilities. Main findings show that human capital, although positively associated with the likelihood that firms introduce new products, does not influence innovation in the way it is performed. Instead, the role of work organisation is more pervasive, since positive and significant relationships have emerged also with different types of innovation strategies, whereas

the managerial experience does not play a decisive role. Our results provide some suggestions for both human resource management and policy makers aiming at boosting innovativeness of firms in these countries.

Protection of Basic Research and R&D Incentives in an International Setting

Reiko Aoki (Japan Fair Trade Commission)
Tina Kao (Australian National U)

We look at cumulative innovations and the protection of basic research which does not carry stand-alone commercial values in an international setting. Due to the complementarity of the innovations, technology leading countries do not always prefer the strongest protection standard and technology lagging countries do not always prefer the weakest protection standard. Our model suggests that level of IP protection to facilitate innovation market should be different when there is no manufacturing involved.

The social origins of inventors

Philippe Aghion (College de France)
Ufuk Akcigit (University of Chicago)
Ari Hyytinen (University of Jyväskylä)
Otto Toivanen (Aalto University School of Business)

Allocating the right individuals into jobs where spillovers are generated enhances economic growth. Using individual level data on a half million Finnish men, we study the relative importance of social origins – parental income, socioeconomic status and education – and own ability as measured by IQ, on the probability of becoming an inventor. A striking starting point is that the relation between parental income and the probability to invent in our data mirrors that in both the contemporary and historical US even though Finland is one of the most equal and socially most mobile societies. We find that the monetary resources of parents matter less than their education and that all parental characteristics are less important than own ability. Our IQ results are robust to using within-family fixed effects. Own education in turn dwarfs all other determinants, and again our results hold in within-family regressions. IQ is a key determinant in obtaining a (high) education, thus impacting on the probability to become an inventor both directly and indirectly through education. We find further that family structure matters: parental divorce reduces the probability to become an inventor, and father’s income matters only if he lives with his son. Step-parents’ resources do not matter. Finally, we find that IQ and father’s income are complements in the sense having a high income father increases the probability of inventing more for high IQ individuals, suggesting that high IQ individuals may suffer from missallocation.

Managing a Conflict

Benjamin Balzer (University of Technology Sydney)
Johannes Schneider (Universidad Carlos III de Madrid)

We investigate the potential of conflict management to settle disputes that otherwise escalate to a costly Bayesian game. Players possess private information relevant in the escalation-game only. The threat of escalation serves as both an endogenous outside option and a screening device. For a general class of two-player Bayesian escalation-games, we provide an economically intuitive characterisation of optimal conflict management. Two features are essential. First, belief management post-escalation is sufficient to solve the conflict management problem. Second, optimal conflict management maximizes the sum of two simple

functions of the information structure in the escalation-game, measuring welfare and discrimination. Our results link the classical mechanism design problem of eliciting information to the information design problem of distributing that information. We illustrate our findings comparing two common escalation-games: simple lotteries that call for sorting mechanisms, and contests that advocate type-independence.

Delegating Performance Evaluation

Igor Letina (University of Zurich)
Shuo Liu (University of Zurich)
Nick Netzer (University of Zurich)

We study optimal incentive contracts with multiple agents when performance evaluation is delegated to a reviewer. The reviewer may be biased in favor of the agents, but the degree of the bias is unknown to the principal. We show that a contest, which is a contract in which the principal determines a set of prizes to be allocated to the agents, is optimal. By using a contest, the principal can commit to sustaining incentives despite the reviewer's potential leniency bias. The optimal effort profile can be uniquely implemented by a modified all-pay auction, and it can also be implemented by a nested Tullock contest. Our analysis has implications for applications as diverse as the design of worker compensation, the awarding of research grants, and the allocation of foreign aid.

Dynamic common-value contests

Toomas Hinnosaar (Collegio Carlo Alberto)

In this paper, I study dynamic common-value contests. Agents arrive over time and expend efforts to compete for prizes that are allocated proportionally according to efforts exerted. This model can be applied to a number of examples, including rent-seeking, lobbying, advertising, and R&D competitions. I provide a full characterization of equilibria in dynamic common-value contests and use it to study their properties, including comparative statics, earlier-mover advantage, and large contests. I show that information about other players' efforts plays an important role in determining the total effort and that the total effort is strictly increasing with the information that becomes available.

Incentives for R&D Personnel and External R&D

Byeong-Seok Koo (KAIST College of Business)

This research focuses on the effect of incentives for R&D personnel on the firms' R&D productivity and investigates whether it differs depending on the use of external R&D. Since external R&D involves uncertain interactions with the external partners and distorts assessment of contribution attributable to the internal R&D personnel, it discourages the belief that their efforts are reflected accurately in the expected outcomes and rewards. Thus, we argue that the adoption of external R&D negatively conditions the role of incentive schemes in motivating R&D personnel. Using a dataset of Korean manufacturing SMEs, we provide the following results. First, the positive effect of incentive schemes on R&D productivity diminishes as external R&D takes a higher share in the firm's entire R&D activities. Second, the negative effect of external R&D is greater when the firm taps into diverse types of external partners. Third, for firms with a large R&D department, however, the negative interaction between incentives and external R&D is less pronounced.

Incentives in Self-Regulatory Organizations

Krzysztof Szczygielski

We study the relationship between a government and a self-regulatory organization (SRO) that represents a heterogeneous group of professionals (such as doctors or scientists). The government wants to purchase a public good from the professionals, but it cannot differentiate between different types of providers, and – unlike the standard adverse-selection model – it has no prior knowledge of their marginal cost. This information can only be obtained from the SRO, thus giving the professionals an additional information rent. We demonstrate that if the government can establish the statutes of the SRO – and by doing so predetermine the relative power of efficient and inefficient agents inside the SRO – then it should give as much power as possible to the efficient agents. Relevant examples from science policy are discussed.

Ownership of Cultural Goods

Maija Halonen-Akatwijuka (University of Bristol)
Evagelos Pafilis (King's College London)

We examine technology – the choice of separation versus unification a public good (e.g. a manuscript collection or broken sculpture) – within the property rights framework. We show that it can be optimal to separate a cultural good even if it not efficient.

A Deeper Analysis on Pharmaceutical Submarket Concentration: the US market in 1987-1998

Maria Letizia Giorgetti (U Milan)

We investigate the impact of submarket concentration on launches of new products in the US pharmaceutical 3 digit submarkets during the period 1987-1998. In addition to the typical specification of entry-exit standard reduced form models, we introduce additional decision drivers from data on submarkets, including concentration, company size relative to incumbent firms and the number of competing products. The estimates of a logit model, based on company panel data for various submarkets measured yearly, show that a concentrated industry at submarket level is a barrier to entry.

Generic entry in the pharmaceutical market: why less is better

Annabelle Marxen (University of Lausanne)
Joao Montez (University of Lausanne)

This paper models an economy with one incumbent firm producing a patent protected drug and two potential entrants of lower quality generics. After patent expiry, the generic producers play a fixed cost entry game in which entry by both is unprofitable due to intense price competition – therefore each enters with a low (high) probability if entry costs are high (low). Early entry agreements allow one generic producer to enter just before patent expiry, thus foreclosing the market for the other generic producer. Surprisingly we find that such agreements are always welfare enhancing, even when entry costs are so low that entry by both generics is virtually costless and thus almost certain in the absence of early entry agreements. Consumers are made worse

off by early entry agreements if entry costs are sufficiently low, but for a range of entry costs, consumer and industry incentives are aligned in favour of early entry.

Price competition in pharmaceuticals – evidence from 1,303 Swedish markets

David Granlund (Umeå University)
Mats A. Bergman (Södertörn University)

We study the short- and long-term price effects of number of competing firms using panel-data on 1303 distinct pharmaceutical markets for 78 months. This is done using actual transaction prices in an institutional setting with little room for non-price competition and where simultaneity problem can be addressed effectively. In the long-term, the price of generics is found to decrease by 81% when the number of firms selling generics is increased from 1 to 10. Half of this reduction takes place immediately and 70% within three months. Also, prices of originals are found to react to competition, but far less and much slower; going from 1 to 10 firms reduces their price by 29% in the long term but by only 2% in the short term.

Taking the Crowd by the Hand – The Intermediary Role of Crowdfunding Platforms

Fabian Gaessler (MPI for Innovation and Competition)
Zhaoxin Pu (MPI for Innovation and Competition)

We exploit a policy change at a leading reward-based crowdfunding platform, Kickstarter, that presumably led to a considerable influx of low-quality projects. In fact, we observe an increase of about 50% of technology projects per week following Kickstarter's decision to abandon due diligence prior to a project's launch. We further find that this policy change had no immediate effect on the number of funders, but led to a decline in the average project description length and the financing rate of projects. Conditional on being financed, projects launched without due diligence are subject to a lower reward delivery rate and receive more negative feedback from funders. Our results suggest that funders fall short in distinguishing projects of different qualities. This gives platform governance a vital role in preventing information-related market failure and in establishing crowdfunding as a viable alternative for the financing of new ventures and innovation.

Pricing in the transition from owning to sharing

Justus Baron (Northwestern University)
Alexandra Zaby (University of Tuebingen)

We model the entry of a platform offering shared access to a durable consumption good, like a ride-sharing platform or car-sharing service. The comparative advantage of sharing increases in the number of users who share. Users, however, only make use of the sharing platform if they don't own the good themselves, and different consumers' goods depreciate at different times. The entering platform thus initially under-prices access to the sharing platform in order to dissuade potential users from acquiring the good and to grow a sufficiently large base of potential customers. A larger base of users uncommitted to their own good, however, also attracts competitive entry by a rival platform. There is thus a potential for excessive inertia, which cannot be overcome by penetration pricing. The risk of excessive inertia and the incentive for under-pricing are lower, the larger the share of potential customers immediately available. Besides users uncommitted to owning the good, potential customers could also be using an outside option which does not imply ownership, e.g., public transportation. The model can account for empirical differences in UBER pricing strategies between US cities.

Competitive Non-linear Pricing: Evidence from the French Automobile Industry

Isis Durrmeyer (TSE)
Andras Niedermayer (University of Mannheim)
Artyom Shneyerov (Concordia University)

We develop a new empirical model of market equilibrium with second-degree price discrimination and oligopolistic competition based on an extension of Rochet and Stole (2002) non-linear pricing theory to multiproduct firms. The demand system is semi-parametrically identified. We estimate the model using French automobile data and take advantage of observing prices and market shares at the car model version level. We test the existence of second-degree price discrimination under imperfect competition. We extend the structural analysis of nonlinear pricing to an oligopolistic setting (see Luo, Perrigne, and Vuong, 2014). Our demand estimate is semi-parametric and does not rely on the exogeneity of characteristics assumptions and on instruments.

Price discriminating minorities in the market for milk

Marit Hinnosaar (Collegio Carlo Alberto)

The paper studies pricing, demand, and consumer welfare in the market for milk. The ability to digest regular milk is a genetic trait, called lactose tolerance, that varies with race, being most common among white consumers. Lactose intolerant consumers can consume lactose free milk, but the price of lactose free milk is on average twice as high as that of regular milk. I estimate a discrete choice demand model to analyze the impact of milk pricing on consumer welfare. I find that uniform pricing of small package sizes of regular and lactose free milk would increase the consumer welfare of racial minorities, while leaving others worse off.

Mixed Bundling in Retail DVD Sales: Facts and Theories

Luis Cabral (NYU Stern)
Gabriel Natividad (Universidad de Piura)

We examine the practice of bundling sequentially-released durable goods such as movie DVDs. We first present some reduced-form empirical evidence: most bundles consist of two different titles and are introduced soon after the second title release; bundles originate from the same studio and consist of similar titles (user rating, box-office revenue, lead actor, etc); finally, we estimate that the gains from bundling are greater the greater the similarity across titles included in the bundle. To the extent that correlation of characteristics is related to correlation of valuations, the evidence seems at odds with the conventional wisdom that the gains from bundling are greater when valuations are negatively correlated. We propose an explanation based on the idea that, by the time a second DVD is released, high-valuation buyers have already purchased the first DVD. This implies that, even if from the beginning buyer valuations are positively correlated, by the time the second DVD is released they are negatively correlated, which in turn makes bundling a revenue-increasing strategy.

Heterogeneous Impacts of Cost Shocks, Strategic Bidding, and Pass-Through: Evidence from the New England Electricity Market

Harim Kim (University of Michigan)

Recently, a series of natural gas price shocks in New England, which affected electricity generation costs of firms heterogeneously, led to a spike in electricity prices. I study the pass-through implications of the change in the competition between firms resulting from this gas price shock, focusing on the heterogeneous impacts of the shock. I use New England electricity auction bidding data and utilize the multi-unit uniform auction model to estimate gas prices implied by firms' bids, which allows me to identify the impacts of the shock on the costs of each firm. To understand how differences in impacts affected the competition, I obtain firm-specific markups and relate them to costs. I find that firms less affected by the shock increase markups more than "hard-hit" firms, and this difference in adjustment increases in the size of the gas price shock. To explore how such heterogeneous incentives for markup adjustment are reflected in price, I then simulate the pass-through rates at the auction level. Although I find that firms completely passed on the cost shocks to prices on average, considerable variation exists in the rates depending on which type of firm sets the price in the auction. Therefore, any estimation of the pass-through rate that fails to incorporate heterogeneity of the underlying rates could yield estimates that are significantly biased downward. I illustrate this by comparing the simulated pass-through rates to the pass-through rate estimated from the reduced form.

Patent Boxes and the Relocation of Intellectual Property

Laurie Ciaramella (Mines ParisTech)

Firms can make use of the discretionary aspect of the location of patent ownership to avoid taxation and maximise their profits. This paper investigates patent transfers with regard to patent box regimes, and study how firms' incentives to relocate patents vary with the heterogeneity of the features of such regimes. Using a comprehensive dataset on international patent transfers, I find that patent box countries significantly attract more patent relocations, and that incoming flows increase in the tax rebate. The fiscal incentives are stronger in countries with a high R&D level, suggesting multiple dimensions in firms' decisions of patent relocation. This is all the more true for more valuable patents. I distinguish between intra-group relocation and patent trade. The results indicate that policy makers could tweak the designs of patent box regimes and the stringency of the rules governing patent transfers to deter relocation driven solely by fiscal optimization motives. Finally, I propose a novel instrument to address the potential endogeneity of R&D expenditures.

Divide and conquer in patent disputes

Emil Palikot (Toulouse School of Economics)
Matias Pietola (Toulouse School of Economics)

Patents are probabilistic rights: while they grant a legal monopoly to the patent holder, potential entrants can engage in a costly and lengthy litigation to challenge patent validity already before the patent is set to expire (Lemley and Shapiro, 2005; Shapiro, 2003). In the shadow of such a litigation, patent holders have resorted to settlement agreements with potential entrants, either to delay or advance entry to the market. Pay-for-delay agreements, where the patent holder makes a reverse payment to compensate an entrant for her entry delay, have been subject to both academic and antitrust scrutiny, especially in the pharmaceutical industry. But licensing agreements, where the patent holder provides a license for early entry, have received little attention in this regard, although both types of settlement deals appear in practice and often simultaneously with different entrants. The question why patent holders discriminate against similar entrants has not been answered in the current economic literature, to our knowledge. This article aims to fill the gap. We show that, facing a credible litigation threat from more than one entrant, the patent holder implements a divide and

conquer equilibrium strategy where she pays to delay some entrants, while accommodates the others, although all entrants are completely identical in our model. This identifies a new source of sequentiality in equilibrium entry to markets governed by patents. Entry accommodation happens either through licensing or litigation, depending on total litigation costs and patent strength. There is licensing when the patent is either sufficiently weak or strong, whereas intermediate patents are litigated. Litigation is more likely to occur when total litigation costs are low. Furthermore, we provide an extension of our model to analyse the implications of a ban on reverse payments. Finally, we show that conditional settlement agreements, where a delayed entrant is allowed to enter early in the event of patent invalidation, always lead to full entry delay and should therefore be banned as restrictions to competition. To better understand the economic logic behind patent settlements, it is necessary to allow for multiple entry to the market. This is because a settlement agreement between the patent holder and one entrant imposes an externality to the other entrants, a strategic feature not present when the patent holder has only a single entrant to deal with: under single entry the patent holder can use a reverse payment to share industry profits with the entrant and full entry delay maximizes these joint profits. However, under multiple entry, the litigation threat from other entrants becomes stronger when one more entrant is delayed. The reason is that an entrant faces less competition after successful litigation against the patent holder, and hence obtains higher profits after a successful entry. Consequently, to secure full entry delay, the patent holder must compensate all entrants with expected duopoly profits. This may render a full entry delay strategy too costly for the patent holder, so that she accommodates entry to the market. Depending on total litigation costs and patent strength, such accommodation happens either through licensing or litigation, as our results indicate. This paper relates to two strands of economic literature: licensing and litigating uncertain patents and pay-for-delay settlement agreements. The main contribution is to connect these areas of economic research. To our knowledge, pay-for-delay agreements and licensing have not been captured in the same economic model before. Yet assuming that different agreements are made independently from each other obfuscates an important economic mechanism, caused by settlement externalities between the entrants. Therefore, we believe, studying different settlement agreements together is essential for building an economic theory for patent settlements. Our results have implications for this policy debate: focusing solely on pay-for-delay agreements is not sufficient, but the incentives to license and litigate should also be taken into account. Banning reverse payments may have the side-effect of removing the incentives for early licensing.

Innovative capacity and export performance: Exploring heterogeneity along the export intensity distribution

Luigi Benfratello (Politecnico di Torino)
Anna Bottasso (Università di Genova)
Chiara Piccardo (Università di Bologna)

This paper sheds additional light on the relationship between firm level innovative capacity and export intensity. By drawing from the literature on exporters' heterogeneity, we apply quantile regression techniques to a sample of Italian firms in order to verify whether the effect of innovative capacity—measured by R&D expenditures—varies along the conditional distribution of the export intensity, after controlling for censoring and potential endogeneity of the innovation variable. We confirm that R&D expenditures positively affect export intensity and we find that such effect has a bell shaped pattern along its conditional distribution: firms characterized by export intensity of about 50% can take advantage from investing in R&D activity. Overall results prove to be robust to several specification checks and suggest not only that firm innovative capacity helps to explain heterogeneity in intensity performance, but also that its positive effect differs across the export to sales ratio distribution.

International and national R&D outsourcing: Complements or substitutes as determinants of innovation?

Maria Garcia-Vega (Nottingham University)
Elena Huergo (Universidad Complutense de Madrid)

This paper empirically examines the impact of international and national outsourcing of R&D to generate innovation, as well as their complementarity or substitutability. Using a panel database of 12,838 Spanish firms for the period 2005-2012, we show that both national and international R&D outsourcing increase firm's innovativeness. The effect of international R&D outsourcing is stronger than the one of national R&D outsourcing on innovation. We find evidence of substitutability between national and international outsourcing to generate innovation.

Markups, exports and R&D: Evidence for Spanish manufacturing

Juan A. Mañez (University of Valencia and ERICES)
Maria Engracia Rochina-Barrachina (University of Valencia and ERICES)
Juan Sanchis (University of Valencia)

This work analyses the relationship between firms' exports and R&D, and markups (defined as price over marginal costs ratio). To estimate firms' markups we follow De Loecker and Warzynski (2012) methodology. While there are many works studying the relationship between exporting and engaging in R&D and firm's productivity, the study of their relationship with firm markups is scarce, and yet is it more if we consider the joint study of the two activities. The database used for this work has been drawn from the business survey on firms' strategies (ESEE) for the period 1993-2009. The results we obtain reveal a positive relationship between mark-ups and either only exporting or jointly undertaking this activity with R&D. In addition, the years of crisis seem to point toward a growing importance of innovation activities on higher mark-ups.

Salience and Horizontal Differentiation

R. Emre Aytimur (University of Manchester)

We study a horizontal differentiation model in which one of the two attributes of a product, product fit and price, is more salient for the consumer than the other. Which attribute is more salient depends on relative differences between the available products, and is determined endogenously as a result of firm strategies. We find that high (respectively, low) marginal costs soften (respectively, harden) price competition of firms. We also find cost over-shifting for some parameter values. Both industry- and firm-level cost increases may be beneficial for firms.

Salient Consumers and Uncertain Product Quality

Andrea Mantovani (University of Bologna)
Elias Carroni (Alma Mater Studiorum Università di Bologna)
Antonio Minniti (DSE, University of Bologna)

We present a duopoly model in which consumers are uncertain about the quality of the products they purchase. In the spirit of Bordalo et al. (2016), consumers are salient, i.e., they tend to overemphasize some specific attributes of a product, whereas underrate less prominent, but possibly important characteristics. Firms compete for consumer attention through the choices of prices. Our findings are along three lines. First, in comparison to the rational setting, salience may increase or decrease prices of both firms, depending on

whether the marginal consumer is price or quality salient. Second, in comparison with Bordalo et al. (2016), we show that uncertainty favors the low-quality producer, while having ambiguous effects on the high-quality one. Third, we prove that our results hold regardless of cost differences among firms.

Salience in Retailing: Vertical Restraints on Internet Sales

Magdalena Helfrich (University of Bayreuth)
Fabian Herweg (U Bayreuth)

We provide an explanation for a frequently observed vertical restraint in e-commerce, namely that brand manufacturers partially or completely prohibit that retailers distribute their high-quality products over the internet. Our analysis is based on the assumption that a consumer's purchasing decision is distorted by salient thinking, i.e. by the fact that he overvalues a product attribute – quality or price – that stands out in a particular choice situation. In a highly competitive low-price environment like on an online platform, consumers focus more on price rather than quality. Especially if the market power of local (physical) retailers is low, price tends to be salient also in the local store, which is unfavourable for the high-quality product and limits the wholesale price a brand manufacturer can charge. If, however, the branded product is not available online, a retailer can charge a significant markup on the high-quality good. As the markup is higher if quality rather than price is salient in the store, this aligns the retailer's incentives with the brand manufacturer's interest to make quality the salient attribute and allows the manufacturer to charge a higher wholesale price. We also show that, the weaker are consumers' preferences for purchasing in the physical store and the stronger their salience bias, the more likely it is that a brand manufacturer wants to restrict online sales. Moreover, we find that a ban on distribution systems that prohibit internet sales increases consumer welfare and total welfare, because it leads to lower prices for final consumers and prevents inefficient online sales.

Searching for a bargain

Marco Haan (U Groningen)
Mart van Megen (University of Groningen)

We consider a model of consumer search with differentiated products where firms may make a lower offer to consumers that initially walk away. The probability of receiving such an offer is exogenous. In equilibrium, consumers with a high match value buy directly, while those with an intermediate match value gamble on receiving a lower price. Surprisingly, we find that equilibrium posted prices are lower than in a benchmark when prices cannot be negotiated. Consumers are better off, while firms are worse off. Total welfare decreases, as there is more search.

Learning Match Quality

Arthur Fishman (bar ilan university)
Dmitry Lubensky (Indiana University)

For many new products or products with multiple attributes, learning the price is often easier than learning one's willingness to pay. We model a market in which consumers face a transportation cost t to discover a seller's price, and then have the option to pay learning cost ℓ to discover the product's match value before deciding whether to purchase or continue searching. In equilibrium each seller optimally sets either a "regular" price which induces a visiting consumer to learn or a sufficiently low "preemption" price which induces the

consumer to accept immediately. In contrast to the common intuition about search frictions, we find that higher learning costs can improve consumer welfare by increasing sellers' incentive to preempt, which lowers prices and increases sales. We also demonstrate that the incentive to preempt is lower in a monopoly than in an oligopoly, and in a uniform example show that welfare and consumer surplus are higher in a monopoly for a range of learning costs.

When consumers do not have enough time to search

Vaiva Petrikaite (IAE (CSIC) and Barcelona GSE)

The paper studies a market where consumers do not have enough time to learn the match values of all existing products. The customers rationally pick about which products to learn to meet time constraints and make purchase decisions afterwards. In a symmetric equilibrium, consumers search a cheaper product if firms sell mass market products, and often search a more expensive product if firms are selling niche market products. The effect of policy restraining consumers from buying without search on consumer surplus and firms incentives to impose similar restrictions depend on the degree of product differentiation.

Selective Information Sharing of a Multi-Product Manufacturer

Clemens Loeffler (Vienna University of Economics and Business)

This paper analyzes a multi-product manufacturer's incentives to selectively share cost information with its different suppliers. In a strategic ex-post disclosure setting, we find that in equilibrium the manufacturer may engage in selective information sharing, disclosing its information to one supplier but concurrently withholding the same information from a second supplier that supplies a complementary input. Selective information sharing in the multi-supplier-multi-product setting arises because pricing decisions of suppliers for complementary inputs are interdependent. Thus, the manufacturer takes into account that an input price adaption due to disclosure also affects the pricing decision of the supplier for the complementary input which eventually affect the input prices of multiple products that require these inputs.

Disclosure Regulation

Stefan Terstiege (Maastricht University)
Cédric Wasser (University of Bonn)

We study buyer-optimal information structures under monopoly pricing that are robust against additional information provision by the monopolist. The information structure determines how well the buyer learns his valuation and hence affects, via the induced distribution of the posterior valuation, also the price set by the monopolist. We identify an upper bound on the buyer's payoff and determine an information structure that achieves this bound whenever it is feasible. Moreover, we find that it is typically not optimal for the buyer to become perfectly informed. An important application for our setting is the regulation of product information when the seller cannot be prevented from disclosing more than required.

Competitive Information Disclosure in Search Markets

Simon Board (UCLA)

Buyers often search across sellers to learn which product best fits their needs. We study how sellers manage these search incentives through their disclosure policies (e.g. product trials, reviews and recommendations), and ask how competition affects information provision. If sellers can observe the beliefs of buyers then we show there is an equilibrium in which sellers provide the “monopoly level” of information, and derive conditions under which this equilibrium is unique. In contrast, if buyers’ beliefs are private, then there is an equilibrium in which sellers provide full-information as search costs vanish. Anonymity thus plays an important role in the understanding of how information markets work.

Patent protection as a puppy-dog ploy

Kaz Miyagiwa (Florida International University)
Yuka Ohno (Hokkaido University)

This paper presents a formal model of patent races in which alternative rent-appropriating measures are available. The model shows that a patent promotes rather than impedes entry, and benefits both patentees and imitators. It also shows that research effort does not respond to subtle changes in patent design when patent protection is insufficient but may even decline when the extent of patent protection is improved. Such a non-monotonic relationship between research effort and the extent of patent protection is consistent with many empirical findings.

Weak Patents, Threat of Litigation and Tacit Collusion

Carlo Capuano (University of Naples Federico II)
Iacopo Grassi (Universita Federico II)

In recent years, the increasing awarding of weak patents has captured the attention of scholars operating in different fields. Weak patents are patents that are not clearly invalid: they cover secondary aspects of an invention and, if litigated, may be invalidated by a court. Patents should grant monopoly power, weak patents just give stochastic protection. In this context, we show how an incumbent may create a weak patent portfolio in order to control market entry, and eventually to collude. In our model, the incumbent fixes the level of patent protection and the threat of denunciation reduces the entrant’s expected profits; moreover, if the entrant deviates from collusion, the incumbent can strengthen punishment suing her for patent infringement, reducing the entrant’s incentive to deviate. Our analysis suggests that, in the presence of weak patents, antitrust authorities should pay attention to the level of patent protection implemented by the incumbent and note whether the holder of a patent reacts to entry by either suing or not suing the competitor.

Patent Pools in Input Markets

Markus Reisinger (Frankfurt School of Finance & Management)
Emanuele Tarantino (University of Mannheim)

We analyze the competitive consequences of patent pools composed of perfectly complementary patents traded in input markets. We find that the impact of pools on welfare depends on the industry structure: While they are procompetitive when no manufacturer is integrated with a licensor, the presence of vertically integrated manufacturers triggers a novel trade-off between vertical and horizontal price coordination. Specifically, differently from common wisdom, pools are anticompetitive if the share of integrated firms is

large, as the increase in patent prices caused by vertical coordination dominates the reduction due to horizontal coordination. We then formulate public policies to screen anticompetitive pools.

Parallel sessions / Friday 1 September 2017 / 09:00 – 10:30

Manipulative Advertising by a Monopolist

Kemal Akoz (New York University Abu Dhabi)
Cemal Eren Arbatli (NRU Higher School of Economics)
Levent Celik (Higher School of Economics)

In this project, we focus on the possibility that ads change consumers' expectations by manipulating the information they receive. In our model, manipulative advertising increases the mean of a noisy but otherwise unbiased signal about the quality level. Systematic bias in signals coupled with a random noise leads a systematic inference bias even though consumers perfectly anticipate the advertising strategies of each type and process their private signal accordingly to update their beliefs. We show that, when ad levels are not perfectly observable, firms may engage in effective manipulative advertising. Our analysis demonstrates that intensity of manipulative advertising does not necessarily increase with quality. The firm type with the highest manipulation is always able to increase its demand and all firm types can succeed in effective manipulation. We also show that manipulative advertising may improve consumer surplus by increasing the consumption of higher quality products and lowering the lower quality ones. Finally, we discuss different implications of a related model that is closer to Bayesian Persuasion models.

Injunctions against false advertising

Alexander Rasch (Duesseldorf Institute for Competition Economics, University of Duesseldorf)
Florian Baumann (Universität Bonn)

We consider a situation of duopolistic competition in which one firm may (falsely) advertise a higher product quality. Consumers are heterogeneous in that one group forms rational beliefs about the advertised good's quality, whereas some consumers are naive in that they fully trust the advertisements. We compare two scenarios in which either the competitor or a government agency has the right to file an injunction suit against the advertising firm. From a welfare perspective, we show that it may be optimal either to have the competitor or the government agency as plaintiff where optimality depends on the share of naive consumers and the trial costs in a non-trivial way. Consumers prefer the social planner (competitor) as plaintiff when the share of naive consumers and trial costs are low (high).

Assisted Self-Persuasion: Advertising with Consumer Adjustment to Choice

Matthew Nagler (The Graduate Center, CUNY)

I develop a new theory of persuasive advertising in which consumers rationally adjust to (i.e., improve their attitude toward) the products they choose and advertising facilitates adjustment. Advertising's price effects depend on whether marginal or inframarginal consumers are most heavily targeted, consistent with the literature. But they also depend on advertising's role as an overall adjustment intensifier, whence variation in the cost of adjustment with the strength of the consumer's initial product preference determines the equilibrium price level. Whether too much or too little advertising is provided in equilibrium depends on the sign and size of advertising's price effect, the relative density of marginal consumers, and the relative extent to which advertising's adjustment cost reductions benefit marginal consumers.

Endogenous choice of minority shareholdings and collusion

Samuel de Haas (Justus-Liebig-University Giessen)
Jörg Schmidt (Justus-Liebig-Universität Gießen)

In a previous paper we have shown, that non-controlling minority shareholdings in rivals (NCMS) lower the sustainability of collusion under a wide variety of circumstances. On the contrary, NCMS are sometimes deemed to facilitate collusion. However, corresponding articles treat the level of NCMS as exogenously given, which raises the question: Would colluding firms find it rational to acquire NCMS in rivals? The present paper endogenizes firms' choice of NCMS and studies their acquisition incentives both in competition and collusion. We show that firms have incentives to acquire NCMS which are accompanied by a shift from collusive to competitive behaviour.

Minority Shares and Cartel Stability

Yossi Spiegel (Tel Aviv U)
Sven Heim (ZEW Mannheim, Centre for European Economic Research Mannheim)
Kai Hueschelrath (ZEW Mannheim and University of Mannheim)
Ulrich Laitenberger (ZEW Mannheim)

We study the effect of the introduction of 54 national leniency programs, which are expected to hinder collusion, on the incentive of firms to stabilize collusive agreements by acquiring horizontal minority shares (MS) in rivals. We find a large increase in horizontal MS acquisitions in the year in which an LP is introduced. More precise, we find that especially MS acquisitions in large rivals increased. This effect is present however only countries with an effective antitrust enforcement and a low level of corruption.

Why Factors Facilitating Collusion May Not Predict Cartel Occurrence – Experimental Evidence

Hans-Theo Normann (U Düsseldorf)

Factors facilitating collusion may often not successfully predict cartel occurrence: when a factor predicts that collusion (explicit and tacit) becomes easier, firms might be less inclined to set up a cartel simply because tacit coordination is more profitable. We illustrate this issue with laboratory data. We run n-firm Cournot experiments with cheap-talk communication (typed messages) between players and we compare them to treatments without the possibility to talk. We conduct this comparison for two, four and six firms. Even though two firms do indeed find it easier to collude both explicitly and tacitly, we observe that the payoff gain from communication increases with the number of firms at a decreasing rate.

Abuse of Dominance and Antitrust Enforcement in the German Electricity Market

Florian Szuecs (WU Vienna)

In 2008, the European Commission investigated the German wholesale electricity market. Allegations included E.ON, a large and vertically integrated electricity company, abusing a joint dominant position by strategically withholding generation capacity. The case was settled after E.ON agreed to divest 5,000 MW generation

capacity as well as its extra-high voltage network. We empirically analyze the effect of the divestitures on wholesale electricity prices. Our identification strategy is based on the observation that energy suppliers have more market power during peak periods when demand is high. Therefore, a market power reduction should lead to convergence between peak and off-peak prices. Using daily electricity prices for the 2006 - 2011 period and controlling for numerous cost and demand drivers, we find economically and statistically significant convergence effects after the implementation of the Commission's decision. Depending on the specification, the gap between peak and off-peak prices was reduced by a significant amount ranging between 15% and 37%. Furthermore, the price reductions appear to be mostly due to the divestiture of gas and coal plants, which is consistent with merit order considerations.

Objectives and Incentives: Evidence from the Privatisation of Great Britain's Power Plants

Thomas Triebs (Loughborough University)
Michael Pollitt (University of Cambridge)

Does privatisation increase firm productivity because the owner's objective changes or because a private owner is better able to control management? And is privatisation sufficient to improve productivity or is it only effective in combination with competition? We answer these questions for Great Britain's electricity industry privatisation. We separate the effects of changes in objectives from changes in incentives by assuming that the former only affect labour but not non-labour inputs like fuel. As effective competition was only introduced several years after privatisation, we are able to contrast the effect of privatisation with the combined effect of privatisation and competition. We find that privatisation increased labour but not fuel productivity; evidence for the importance of objectives. However, the onset of effective competition increased fuel, but not labour, productivity. Only effective competition makes plants fully productive.

Real-Time Pricing and Imperfect Competition in Electricity Markets

Stephen Poletti (University of Auckland)
Julian Wright (National University of Singapore)

This paper analyses the long-run effects of a shift to real-time pricing (RTP) of electricity when generating firms have market power. We find that an increase in consumers on RTP contracts decreases peak prices and increases off-peak prices, with total installed capacity decreasing. Consumer surplus and welfare increase while the generators' profit decreases. We calibrate our model to the New Zealand electricity market to measure the possible size of these and other effects. We explore whether market power provides a rationale or policies that encourage consumers to adopt real-time pricing contracts.

Economies of skill of R&D intensive firms: Breaking the law of diminishing marginal returns to labour

Sara Amoroso (JRC European Commission)

Despite the theoretical and empirical evidence on the contribution of R&D investment to profitability, little attention has been paid to the impact of labour on profits, considering the opportunities for economies of skill of R&D intensive firms. In this paper, we propose a structural approach to test the hypothesis of non-diminishing returns to labour for a set of R&D investing companies and we explore how the marginal returns to labour vary with the level of knowledge capital (R&D) intensity. Results show that more knowledge intensive firms have non-diminishing returns to labour, while less knowledge intensive companies exhibit diminishing

returns. Moreover, less knowledge intensive firms have to be able to generate a lot more profits than their counterparts to achieve non-diminishing marginal returns to their employees.

Managerial knowledge spillovers and firm productivity

Marie Le Mouel (DIW Berlin)

Heterogeneity in managerial knowledge has been shown to be a driving force behind differences in firm productivity. Concurrently, a sizeable share of knowledge spillovers between firms is driven by labour mobility. The present paper seeks to bring together these two strands of literature, and test whether the mobility of managers between firms is a critical vector for the transmission of production-relevant knowledge. We estimate a structural model of production that incorporates our spillover variable directly into the productivity process. This departs from the previous literature on Learning-by-Hiring, where firm-level productivity is estimated separately and then regressed on measures of mobility. Our results suggest that the departure of managers has a detrimental effect on productivity of around 5%. Positive productivity gains are more likely to arise when hired managers come from firms with higher spillover potential (e.g. from the same industry, with important human capital) and when the movers themselves are equipped to acquire this knowledge through experience and qualification. Overall, we find that when significant, the effect of hiring the relevant managers from firms with spillover potential raises productivity in the following period between 1 to 2%.

ICT investment and Productivity: A firm level analysis

Emmanuel Dhyne (National Bank of Belgium)
Jozef Konings (Katholieke Universiteit Leuven)
Jeroen Van den bosch (KU Leuven)
Stijn Vanormelingen (KU Leuven)

In recent years, most industrial economies have witnessed a slowdown in productivity growth. Yet, societies are increasingly transformed by the introduction of computers, robots and more in general the adaption of information and communication technology (IT), which should increase production efficiency. An important challenge to assess the impact of IT on productivity however, is the measurement of IT, which is mostly only available at a high level of aggregation, either the 2 or 3-digit sector level. This paper therefore first develops a measure of IT investment at the firm level, which improves on earlier ones used in the literature. To this end, we use a new and hitherto unexploited data set of all VAT transactions between firms, which allows us to trace IT purchases between firms. The rich firm level dataset allows us to look at various dimensions of firm level heterogeneity in the effects of IT investments.

Winners, Losers, and Facebook: The Role of Social Logins in the Online Advertising Ecosystem

Jan Krämer (University of Passau)
Daniel Schnurr (University of Passau)
Michael Wohlfarth (University of Passau)

Social logins, such as “Log in with Facebook”, improve a website’s user experience and therefore enjoy great popularity among content providers (CPs) and users alike. They also enable the social network and the CPs to share data, which individually improves their ability to place targeted advertising. We develop a game-theoretic model that offers a microfoundation and characterization on how social logins affect CPs’ competition for

users, as well as CPs' competition with the social network in the advertising market. We show, among others, that the voluntary adoption of the social login may yield a prisoner's dilemma-like situation for the CPs.

User Data and Platform Competition

Philipp Dimakopoulos (Humboldt University Berlin)
Slobodan Sudaric (Humboldt-University of Berlin)

We analyze platform competition for users and advertisers where platforms collect user data which is used for improved ad-targeting. Considering that users incur privacy costs when providing data and face reduced nuisance costs when seeing more relevant ads, we show that the equilibrium amount of data provision is distorted when compared to the efficient level and can be inefficiently high or low. This distortion depends on the opposing cross-group externalities as well as the degree of competitiveness on each market side: if overall competition is weak or if targeting benefits are relatively low, too much data is collected, and vice-versa. Further, we find that softer competition on either side of the market increases the equilibrium level of data, which implies substitutability between competition policy measures on both market sides. Nevertheless, in a situation of over-provision of user data it is more effective to strengthen platform competition for advertisers.

Memory and Markets

Sergei Kovbasyuk (Einaudi Institute for Economics and Finance)
Giancarlo Spagnolo (Stockholm School of Economics-SITE, EIEF, CEPR, Tor Vergata)

We analyze the effects of erasing past records on long-run outcomes in a dynamic market with heterogeneous sellers whose quality changes with time. Buyers leave positive or negative feedback on sellers with an information intermediary. When average seller quality is low, perfect records of past feedback lead to low information production and no trade in the long run. Limited records encourage information production and sustain stationary equilibria with trade when memory of positive records is short and memory of negative ones is long. The stationary equilibrium with the highest social welfare requires the memory of negative records to be limited.

Research and Development as an Initiator of Fixed Capital Investment

Andrin Spescha (ETH Zurich)
Martin Woerter (ETH Zürich)

This paper investigates the causal relationship between firms' research and development expenditures (R&D) and their investments into fixed capital. The literature provides two contrasting views in this respect. The first view holds that a firm's research activity causes, via the creation of inventions, subsequent investment into fixed capital, as the firm needs additional capacities to produce the new goods or services that follow from the inventions. The second view holds that firms' fixed capital investments cause intensified research activity, as novel capital goods from external suppliers offer the firms' researchers a wide range of additional technical possibilities of how to build new prototypes. Using panel data of Swiss firms ranging from 1990 to 2014, the paper applies, contrasting the existing empirical literature only based on VARs, a 2SLS approach to uncover the direction of causality between R&D and fixed capital investment. In order to obtain exogenous instruments, the paper exploits shocks to i) technological opportunities and ii) sales from capital goods suppliers. Results show a one-way causal relationship; we find evidence for that firms' R&D expenditures cause fixed capital investments,

but we do not find evidence for the reverse effect. When additionally looking at innovation performance, R&D activities turn out to be complementary to fixed capital investment, in the sense that they markedly increase the expected return on investment. Thus, increasing research activity may not just be valuable for long-run economic growth but, via investment, may also give the economy a head start in times of a prolonged economic downturn.

Subsidized and non-subsidized R&D projects: Do they differ?

Mila Koehler (ZEW)
Bettina Peters (ZEW Mannheim)

Little is known about whether and to what extent the outcome of subsidized and non-subsidized R&D projects differ. In this paper we exploit a novel dataset of patent applications filed in Germany between 1995-2005, which allows us to identify if a patent application stems from a subsidized project or not. We use a variety of patent indicators to elucidate to what extent successful subsidized and non-subsidized R&D projects differ. Results show that patent applications from subsidized R&D projects have a higher private value, are more often co-applied, more general, but less original, and have larger inventor teams when compared to all other patent applications filed by the same firms. These differences seem to reflect that thematic R&D programs aim to support R&D projects that have an immediate economic utilization of results and in which firms collaboratively develop basic technologies in high-tech fields.

The Impact of Process Innovation on Prices: Evidence from Automated Fuel Retailing in The Netherlands

Tadas Bruzikas (U Groningen)
Adriaan Soetevent (U Groningen)

In the last decade, many European countries have seen a sharp increase in the number of automated fueling stations. We study the effect of this process innovation on prices at stations that are automated and their competitors using a difference-in-differences matching strategy. Our estimates show that prices at automated stations drop by 1.0 to 2.1% immediately after conversion and stabilize at this lower level. We find no indication of competitive spillover effects to neighboring sites at the conventional significance levels. Other than previous studies, our estimates do not reveal a difference in impact between early and later adopters of automation.

Networks, Frictions, and Price Dispersion

Javier Donna (The Ohio State University)
Pablo Schenone (Arizona State University)
Gregory Veramendi (Arizona State University)

This paper uses networks to study price dispersion in seller-buyer markets where buyers with unit demand interact with multiple, but not all, sellers; and buyers and sellers compete on prices after they meet. Our approach allows for ex post indirect competition, where a buyer who is not directly linked with a seller affects the price obtained by that seller. Indirect competition generates the central finding of our paper: price dispersion depends on both the number of links in the network, and how these links are distributed. Networks with very few links can have no price dispersion, while networks with many links can still support significant price dispersion. We present three main theoretical results. First, for any given network we characterize the

pairwise stable matchings and the prices that support them. Second, we characterize the set of all graphs where price dispersion is precluded. Third, we use a theorem from Frieze (1985) to show that the graphs where price dispersion is precluded arise asymptotically with probability one in random Poisson networks, even as the probability of each individual link goes to zero. We also provide quantitative results on the finite sample properties of price dispersion in random networks. Finally, we present an application to eBay to show that: (i) a calibration of our model reproduces the price dispersion documented in eBay quite well, and (ii) the amount of price dispersion in eBay would decrease substantially (35-45 percent as measured by the coefficient of variation) in a counterfactual analysis, where we change eBay's network structure so that links are drawn with equal probability for all sellers and buyers.

Regulatory Holidays and Optimal Network Expansion

Bert Willems (Tilburg University)
Gijsbert Zwart (University of Groningen)

We model the optimal regulation of continuous, irreversible, capacity expansion, in a model in which the regulated network firm has private information about its capacity costs, investments need to be financed out of the firm's cash flows from selling network access and demand is stochastic. If asymmetric information is large, the optimal mechanism consists of a regulatory holiday for low-cost firms, and a mark-up regime for higher-cost firms. With the regulatory holiday, a firm receives the full revenue of capacity sales, and expands capacity as if it were an unregulated monopolist. Under the mark-up regime, a firm receives only a fraction of the capacity revenues, and is obliged to expand capacity whenever the price for capacity reaches a threshold. The regulatory holiday is necessary to fund information rents to the most efficient firms, which invest relatively early, as direct investment subsidies are not feasible.

Sequential Collective Search in Networks

Niccolo Lomys (University of Mannheim)

I study social learning in networks where rational agents act in sequence, observe the choices of their connections, and acquire private information via costly sequential search. I link the dynamics of individual search policies in any Perfect Bayesian equilibrium of the model to the dynamics of the probability that agents select the best action. When search costs are not bounded away from zero, an improvement principle holds despite the informational environment and the inferential challenge crucially differ from those of the standard model with exogenous private signals. I leverage this principle to show that asymptotic learning obtains in well-connected networks where information paths are identifiable. For search costs that are bounded away from zero, even the weaker requirement of maximal learning fails in a large class of network topologies. Networks where agents observe (possibly correlated) random numbers of immediate predecessors share many properties with the complete network, including the rate of convergence. Different transparencies of past histories have short-run (but not long-run) implications for welfare and efficiency. The simple policy intervention of letting agents observe the relative fraction of previous choices reduces welfare and efficiency losses.

Hotel rankings of online travel agents and pricing across distribution channels

Matthias Hunold (Düsseldorf University)
Reinhold Kesler (ZEW Mannheim)

Ulrich Laitenberger (ZEW Mannheim)

We investigate whether online travel agents (OTAs) react to lower hotel prices at other OTAs or the hotels' websites by means of worse rankings or similar measures. We formally characterize how such a strategy can be used by an OTA to restrict price competition across distribution channels. Our empirical analysis indicates that the position of a hotel in the search results of Booking.com is better when the prices charged by the hotel on other channels are higher. This suggests that OTAs might bias their search results to discipline hotels for aggressive prices on competing channels.

The Impact of Price Controls in Two-sided Markets: Evidence from US Debit Card Interchange Fee Regulation

Mark Manuszak (Federal Reserve Board of Governors)
Krzysztof Wozniak (Federal Reserve Board of Governors)

We study the pricing of deposit accounts following a regulation that capped debit card interchange fees in the United States and provide the first empirical investigation of the link between interchange fees and granular deposit account prices. This link is broadly predicted by the theoretical literature on two-sided markets, but the nature and magnitude of price changes are key empirical issues. To examine the ways that banks adjusted their account prices in response to the regulatory cap on interchange fees, we exploit the cap's differential applicability across banks and account types, while accounting for equilibrium spillover effects on banks exempt from the cap. Our results show that banks subject to the cap raised checking account prices by decreasing the availability of free accounts, raising monthly fees, and increasing minimum balance requirements, with different adjustment across account types. We also find that banks exempt from the cap adjusted prices as a competitive response to price changes made by regulated banks. Not accounting for such competitive responses underestimates the policy's impact on the market, for both banks subject to the cap and those exempt from it.

Competition between a platform and merchants for selling services

Carlotta Mariotto (ESCP)
Marianne Verdier (U Paris 2)

In this paper, we study competition between a platform and merchants for selling services. In our setting, consumers can buy different versions of the same product either through a platform or directly from a merchant. The platform's and the merchant's selling services are differentiated both on the consumers' side and on the merchants' side. We examine whether restrictions that are imposed by platforms to sellers such as price parity clauses or exclusive arrangements reduce consumer surplus. We show that in some cases, the platform can impose restrictions that are socially optimal.

Executive pensions and the pay-performance relation. Evidence from changes to pension legislation in the UK

Ian Gregory-Smith (U Sheffield)

This paper evaluates the role of executive pensions in the relationship between executive compensation and corporate performance. As a natural experiment, we exploit a major change to the tax-free allowances

governing executive pensions. This reform affected the cost of pensions for firms whose executives had accumulated pension benefits in excess of the prescribed limit. We find a strong reaction to the reform. After 6th April 2006, executives saw their defined benefit pension scheme replaced with supplementary cash payments. This had the unintended consequence of significantly decreasing the relationship between executive pay and firm performance.

Endogenous Scope of Firm-Union Bargaining with Vertical Pay Comparisons

Michael Kopel (University of Graz)
Emmanuel Petrakis (University of Crete)
Anna Ressi (Univ. of Graz)

Empirical and experimental evidence suggests that people's motivation and incentives in the workplace are determined by both horizontal and vertical pay comparisons. In many countries these relative wage concerns are institutionalized by collective bargaining. In a Cournot-duopoly model with firm-specific unions internalizing workers' fairness concerns, we direct our focus towards the unresolved discussion on the scope of bargaining. We show under which circumstances firms and unions endogenously choose to bargain over wages only (right-to-manage bargaining) or over both wages and employment (efficient bargaining). While in most traditional models pure wage-employment bargaining can never be sustained in equilibrium, empirical evidence documents that firm-union bargaining often covers both wages and employment. The papers which try to explain these observations mainly focus on strategic motives in order to get a competitive edge in the final goods market. In contrast to this external perspective, we propose an alternative viewpoint which is based on internal frictions. In our paper, we propose that workers' vertical fairness concerns serve as a possible explanation for why there are industries where we observe negotiations over both wages and employment. Last but not least, our analysis offers testable hypotheses to investigate in future empirical studies concerning the recent shift towards more decentralized bargaining institutions and the prevalence of efficient bargaining.

Wages, wage policy and the family firm: Firm-level evidence on the Netherlands

Sarah Creemers (Hasselt University)
Mark Vancauteren (Universiteit Hasselt)
Wim Voordeckers (Hasselt University)
Bart Loog (AZL)

This paper focuses on wage differences between family and non-family firms. Using a matched employer-employee dataset of 1802 firms for the period 2010-2013 in the Netherlands, we confirm that family firms pay on average lower wages, with a discount that lies around 12% once we control for (un)observed worker and firm characteristics. Our results reveal that worker and/or firm fixed effects can be attributed in explaining the family wage discount. Indeed, we find that worker fixed effects partially explain the family wage discount with about 4.5% points. On the other hand, firm fixed effects contribute to an increasing wage gap of family firms. This may be explained by the fact that workers in family firms tend to sort themselves into firms that pay, on average, lower wages. Next, we make unobserved firm heterogeneity more explicit by looking at the role of unions. Our analyses reveal differences between family and non-family firms in terms of wage policy. The bargaining power in family firms appears to be lower, which implies that the role of unions in those firms is rather limited. Our analysis further reveals that these results hold only for high-skilled firms.

Screening Procrastinators with Automatic-Renewal Contracts

Johannes Johnen (Université catholique de Louvain and CORE)

Automatic contract renewals are a common feature in consumer markets and a frequent concern among policy makers. They can be used to exploit consumer inertia when consumers forgo benefits from switching to better alternatives. I consider two sources for this inertia – limited attention and present bias – which can both lead to procrastination. In both cases, I study how contract renewal can be used to price discriminate between consumers with different inclinations to procrastinate. Optimal monopolistic automatic-renewal contracts distort contracts to exploit procrastination of consumers. However, the more a monopolist designs contracts to exploit procrastinators, the higher are the benefits to more sophisticated consumers who can 'game' these offers by not procrastinating. This adverse-selection problem regarding automatic renewal forces monopolists to focus less on exploiting procrastinating consumers, leading to fewer consumer mistakes. In this setting, and contrary to classic literature on price discrimination, information rents can induce monopolists to offer more efficient contracts. I show that adverse selection does not occur with competition. As a result, competitive firms focus more on exploitation and frequently offer less efficient contracts. Indeed, with limited attention, competition leads to larger renewal prices. I discuss implications for teaser rates and evaluate recent policies on automatic-renewal contracts in the USA and the UK, such as reminders, salience of automatic-renewal features, and bans.

Pricing Strategy under Reference-Dependent Preferences: Evidence from Sellers on StubHub

Jian-Da Zhu (National Taiwan University)

This paper uses both listing and transaction data on StubHub to study how different types of sellers price their tickets. Two types of sellers, single sellers and brokers, are identified from the data. The single sellers only post a few listings in the whole season, while the brokers sell lots of tickets in many listings. The results show that the listing prices set by the brokers are higher than those set by the single sellers in the early days before an event, but this reverses in the last few days before an event. This study also proposes a dynamic pricing model based on the reference-dependent preferences of sellers to support this finding. The estimation result further leads to the conclusion that single sellers tend to use the original purchase prices as reference points to determine the listing prices every day before an event.

Selling in Advance to Loss Averse Buyers

Heiko Karle (Frankfurt School of Finance & Management)
Marc Moeller (University of Bern)

This paper considers the influence of consumer loss aversion on firm conduct and market performance in settings with an advance purchase option. Examples include transportation or entertainment tickets as well as seasonal or new products. We show that loss aversion has an anti-competitive effect on prices and a pro-competitive effect on advance purchase discounts. Our model allows us to disentangle the effects of loss aversion in the money- and the taste-dimension. Surprisingly our result holds independently of the relative strength of loss aversion in these two dimensions. Moreover, accounting for loss aversion delivers the novel insight that the firms' incentive to sell in advance can be strongest when the risk of a mismatch between consumer preferences and product characteristics is highest.

Market Structure and Price Dispersion: Asymmetric Oligopoly with Sequential Consumer Search

Makoto Hanazono (Nagoya University)
Noritaka Kudoh (Nagoya University)

This paper presents a new theory of price dispersion. We build a model of oligopolistic price competition among n firms with sequential consumer search, in which each firm consists of a mass of sellers. Since search is random, consumers are more likely to meet sellers from a larger firm. This reduces the consumer's outside option of rejecting a trade with a seller from a larger firm, generating a greater market power for a larger firm. We show that price dispersion disappears as search frictions disappear. Interestingly, there is a non-monotonic relationship between search frictions and price dispersion.

Information Acquisition and Diffusion in Markets

Atabek Atayev (University of Vienna)
Maarten Janssen (U Vienna)

In this paper we study how word-of-mouth communication affects the functioning of homogeneous goods markets with sequential consumer search. Word-of-mouth communication leads to some consumers free-riding on their friends leading to less active search. Free-riding has also an important positive effect in that consumers that do not actively search themselves are more likely to be informed about more than one price. Free riding makes that more price comparisons are made, imposing positive competitive pressure on firms. We show that depending on the network structure and the way information is diffused among consumers, price dispersion disappears when the search cost becomes small and prices converge to marginal cost.

Beliefs and Consumer Search

Maarten Janssen (U Vienna)
Sandro Shelegia (Universitat Pompeu Fabra)

When consumers search sequentially for prices and product matches, their beliefs of what they will encounter at the next firm are important in deciding whether or not to continue to search. In search environments where retailers have a common cost that is not known to consumers and is either the outcome of a random process or strategically set by an upstream firm, it is natural for consumers to have symmetric beliefs. We show that market outcomes under symmetric beliefs are quantitatively and qualitatively different from outcomes when consumers hold passive beliefs. Market prices are higher with symmetric beliefs (and can be as high as the joint profit maximizing prices), and are non-monotonic in the search cost. Moreover, price rigidities arise endogenously as retailers are not willing to charge prices above consumers' reservation utility. These phenomena become exacerbated in a vertical relations environment.

The Impact of Labour Policies on Ontario Gold Mines in World War II

Robert Petrunia (Lakehead Universtiy)
Karl Skogstad (Lakehead University)

This paper uses a financial and operational data set of Ontario gold mines between 1939 and 1945 to analyze the response of the industry to two government labour policies enacted during the Second World War. The early war policy designated the gold mining industry as vital for the war effort to boost gold output in order to

purchase foreign reserves. The late war policy resulted in restrictions that prevented labour movement into and between the mines. We find that the first policy is largely ineffective in its goal. Although the market allocated labour to the lowest cost producers, the policy caused only a modest increase in gold output. To evaluate the second policy, we estimate the cost curves of the individual mines. The results indicate an inefficient allocation of labour across mines. The gold mining industry experiences operating costs 22 percent higher than with efficient labour allocation during this late war period. The estimated efficiency loss to the industry is nearly $58.4 million 1940 Canadian dollars.

The Effects of Foreign Competition on Network Hiring

Margaryta Klymak (Trinity College Dublin)

The process through which firms find workers is an important determinant of productivity in the developing economies. This paper investigates a previously unexplored macroeconomic effect of foreign competition on network hiring. Using a rich panel dataset of Vietnamese SMEs, this paper shows that as foreign competition increases a firm is more likely to hire through personal contacts or referrals. Firms increasingly hiring through their network can explain a significant part of the productivity gains associated with foreign competition. This result has shown to be robust across various specifications. A matching model is presented to explain this behaviour.

Broadening The Base: Industrial Development in a Historical Perspective

John Sutton (London School of Economics)

This paper presents two new and striking empirical regularities regarding the growth of industrial output by country over the past half century, and on the basis of these, it offers some views on the design of policies to support industrialization.

I will survive. Pricing strategies of financially distressed firms

Ioana Duca (ECB)
José montero (Banco de Espana)
Marianna Riggi (Banca d'Italia)
Roberta Zizza (Banca d'Italia)

We consider a standard result of customer market theory: if firms have stable customer relations and face financial frictions, they may keep prices relatively high in times of low demand and vice versa. Indeed, during recessions, when firms have low cash flow and greater difficulty in raising external funds, they may set higher prices on their locked-in shoppers to maintain short-term profits at the expense of future market shares. We extend this theoretical framework so that the counter-cyclical behaviour of price margins is strengthened by the expected persistence of the downturn and the procyclicality of competitive pressures. We test these predictions for Italian firms participating in the 2014 Wage Dynamics Network Survey. All things being equal, financially constrained firms charge higher markups when faced with low demand; this behaviour is more evident when demand is perceived as being persistent. Our findings suggest that the severity of financial constraints in Italy was one of the causes of the sustained growth of prices in 2010-2013, notwithstanding the considerable slack in the economy.

Intermittent Price Changes in Production Plants: Empirical Evidence using Monthly Data

Oivind Nilsen (Norwegian School of Economics)
Magne Vange (Norwegian School of Economics)

The price-setting behaviour of manufacturing plants is examined using a large panel of monthly surveyed plant- and product-specific prices. The sample shows a high frequency of zero changes, relatively small price changes, and a strong seasonal price change pattern. The intermittent feature of price changes is modelled with thresholds which are lower in January, and a quadratic loss-function associated with the distance from target price. The findings show statistically significant pricing thresholds, which are only two thirds in January, and partial adjustment parameters implying that 60% of the deviation between the target price and current price is closed each month.

Price Changes – Stickiness and Internal Coordination in Multiproduct Firms

Wilko Letterie (Maastricht University)
Oivind Nilsen (Norwegian School of Economics)

We assess empirically the micro-foundations of producers' sticky pricing behaviour. We account for various functional forms of menu costs. The focus is on the analysis of multiproduct plants, and the menu costs therefore also allow for economies of scope. The structural model developed is tested using monthly product- and plant-specific producer prices for Norwegian plants. We find evidence of linear and fixed menu costs that account for inaction of price adjustment. Convex menu costs are statistically significant but of moderate importance. Finally, our estimates suggest economies of scope in adjusting prices resulting in (incomplete) synchronization of price changes.

Parallel sessions / Friday 1 September 2017 / 11:00 – 12:30

Repeated Moral Hazard and Cartel Stability

Yongying Wang (Université de Caen)

Consider a cartel consisting of two identical firms. Within each firm, a risk neutral shareholder offers a menu of contract to a risk-averse manager who may shirk in each period. The manager’s effort is unobservable and influences the firm’s production cost in each period. Our model shows that an optimal contract which solves the repeated moral hazard problem by restricting the manager’s actual and future utilities influences the stability of a cartel. We also show that the degree of risk-aversion of the manager plays an important role upon the sustainability of collusion: the more the manager is risk-averse, the more stable a cartel would be, since deviation means supporting more costly risk to the manager.

Consumer Loss Aversion, Product Experimentation and Implicit Collusion

Salvatore Piccolo (Università Cattolica del Sacro Cuore)
Aldo Pignataro (Università Cattolica del Sacro Cuore)

Two firms supplying experience goods compete to attract loss averse consumers that are uncertain about how well these goods fit their needs. To resolve valuation uncertainty, firms can allow perspective customers to test (experiment) their products before purchase. We investigate firms’ dynamic incentives to allow experimentation and analyze the resulting effects on the profitability and the stability of horizontal price fixing. The analysis shows that, depending on the regulatory regime in place – i.e., whether experimentation is forbidden, mandated or simply allowed but not imposed (laissez-faire) – the degree of consumer loss aversion has ambiguous effects both on the profits that firms can achieve through implicit collusion and on the extent to which these agreements can be sustained. Moreover, we also show that while in static environments consumer welfare is always maximized by a policy that forbids experimentation, the opposite might happen in a dynamic environment.

Collusion with limited product comparability

Nicolas de Roos (University of Sydney)

We adapt the framework of Spiegler (2016) to examine the effect of limited product comparability on the viability of collusion. Firms choose messages to influence the propensity of consumers to compare products. The cartel hinders transparency on the equilibrium path, and seeks it for optimal punishment. We provide four conditions, each sufficient to ensure obfuscation aids collusion: if firms can mix over messages or commit to messages, if messages are informative, or if the cartel can collectively control comparability. We also analyse the role of message differentiation and complexity for optimal messages and for the sustainability of collusion, and argue that obfuscation is more effective when message differentiation is important for comparability.

Priority pricing by a durable goods monopolist

Joao Correia-da-Silva (U. Porto)

A durable goods monopolist faces buyers with privately observed valuations in two periods, being unable to commit in the first period on the mechanism that she will propose in the second period. The monopolist is able to use a mediation device that prevents her from discriminating buyers in the second period based on the choices they made in the first period. Moreover, the monopolist is able to prevent buyers from retrading among themselves. It is shown that, although there is a continuum of possible valuations, the optimal first-period mechanism is a menu with at most two possibilities: a relatively high price with no rationing; and a relatively low price subject to rationing. In the second period, the monopolist optimally posts an intermediate price.

Managing Strategic Buyers: Should a Seller Ban Resale?

Juan Ignacio Beccuti Vazquez (U Bern)
Joaquin Coleff (Universidad Nacional de la Plata)

We study a seller facing two strategic and privately informed buyers who has one good to sell in a two periods game. This good can be consumed only at the end of the second period, after which the good is valueless. We compare the sequence of optimal prices of this game under two environments: allowing versus forbidding a resale option. In the latter, there is an increment in buyers' willingness to pay in the first period, inducing a larger first-period price. However, the first-period price elasticity of demand also increases, inducing a lower price. We show that the second effect dominates for a bunch of reasonable parameters, motivating a reduction in the first-period price, an increment in seller's profits, in the aggregate consumers' surplus, and, thus, in welfare.

Dynamic Pricing with Search Frictions

Daniel Garcia (U Vienna)

This paper studies dynamic pricing in a market with search frictions. Sellers have a single unit of a good and post prices in every trading period. Buyers have to incur in a search cost to match with a new seller and upon matching they observe the price and the realization of some idiosyncratic match value. There is no discounting but trade ends at an exogenously given deadline. We show that equilibrium involves trading in finitely many trading periods, with quantities traded increasing over time. Under mild conditions on the buyer-to-seller ratio and the distribution of valuations, prices decrease at increase rates as the deadline approaches. We derive the gains from trade in equilibrium and their distribution between buyers and sellers. For the case in which the measures of buyers and sellers coincide, we provide a full characterization of the (unique) equilibrium for a class of distribution functions. We finally discuss implications for market design, including the use of platform fees and cancellation policies.

The effect of entry restrictions on price. Evidence from the retail gasoline market

Valeria Bernardo (University of Barcelona)

I exploit a change in Spanish regulations to test the effect of entry restrictions on retail gasoline equilibrium prices. In February 2013, a Central Government reform allowed gasoline stations to operate in industrial and commercial areas. This deregulation led to a high number of new market entrants over the following two years in these newly designated free entry areas. By isolating markets exposed to entry and markets not affected by

new entrants, and using a difference-in-difference approach, gasoline retail prices are found to fall on average by 1.82% in the free entry areas. This result is economically significant, representing one fourth of the average retail margin. Moreover, if adopted by every gasoline station, the price reduction would imply savings in gasoline expenditure alone of around 274 million euros per year. Additionally, the results show that the equilibrium price reduction is greatest when the entrant is unbranded and that the effect decreases with the number of entrants and over time.

Reviving Small-Scale Reservations: Evidence from Korea

Hyunbae Chun (Sogang University)
Hailey Hayeon Joo (Sogang University)
Jisoo Kang (Sogang University)
Soo Hyung Kim (Sogang University)

Small-scale industry (SSI) reservation policy was introduced in Korea during the early 2010s in order to promote the competitiveness of small firms. Because the SSI policy inherently limits the large firms' entry and activities, there has been ongoing debate on whether or not the policy causes allocative inefficiency in the market. In this paper, we examine the effects of the SSI reservation policy on small firms' performance in the Korean ready-mixed concrete industry as well as its impact on industry-level allocative efficiency. Since the ready-mixed concrete industry consists of many local geographic markets due to high transportation costs, small firms in local markets where large firms pre-existed in 2012 may face greater impact of the SSI policy than small firms in local markets where large firms did not. Using exogenous variation in pre-existing large firms across county-level markets, we estimate difference-in-differences models. We find that the SSI policy increases the average productivity of small firms in the local markets affected by the policy. Moreover, the SSI policy lessens competition and thus weakens the market selection process in the industry. The local market affected by the SSI policy exhibits more dispersed productivity distribution than the counterpart. Our finding suggests that the SSI policy may result in allocative inefficiency for the reserved industries.

Leapfrogging: Time of Entry and Firm Productivity

Josh Ederington (University of Kentucky)
Georg Götz (Justus-Liebig-Universität Gießen)

We develop a model in which ex ante identical firms make endogenous entry and technology adoption decisions. We show that this model is capable of matching the stylized facts in which entry is dispersed over time and that, in many industries, it is the newest firms which are the most likely to exhibit high productivity growth and adopt new innovations (i.e., leapfrogging). We then derive the characteristics of those industries where such leapfrogging is likely to occur.

Competition and physician behaviour: Does the competitive environment affect the propensity to issue sickness certificates?

Kurt Brekke (Norwegian School of Economics)
Tor Helge Holmås (Uni Research AS)
Karin Monstad (Uni Reseach AS)
Odd Rune Straume (U Minho)

Competition among physicians is widespread, but compelling empirical evidence on the impact on service provision is limited, mainly due to lack of exogenous variation in the degree of competition. In this paper we exploit that many GPs, in addition to own practice, work in local emergency centres, where the matching of patients to GPs is random. This allows us to observe the same GP in two different competitive environments; with competition (own practice) and without competition (emergency centre). Using rich administrative patient-level data from Norway for 2006-14, which allow us to estimate high-dimensional fixed-effect models to control for time-invariant patient and GP heterogeneity, we find that GPs with a fee-for-service (fixed salary) contract are 11 (8) percentage points more likely to certify sick leave at own practice than at the emergency centre. Thus, competition has a positive impact on GPs' sick listing that is reinforced by financial incentives.

When Time is of the Essence: Pharmacy Opening Hours in a Deregulated Environment

Agnes Kügler (Austrian Institute of Economic Research)
Martin Labaj (University of Economics in Bratislava)
Peter Silanic (University of Economics in Bratislava)
Alzbeta Siskovicova (University of Economics in Bratislava)
Barbora Skalicanova (University of Economics in Bratislava)
Christoph Weiss (Vienna University of Economics and Business)
Biliana Yontcheva (Vienna University of Economics and Business)

The present paper provides first empirical evidence for firms using opening hours as a strategic instrument. Using data from the pharmacy market in Slovakia, we find a significant relationship between the opening hours of each seller and those of the local competitors. This complementarity, coupled with indications that firms under competitive pressure tend to set longer working hours, suggests that liberalization initiatives in pharmacy services are likely to lead not only to an increase in the number of sellers but also in the temporal availability of pharmacy services. Additionally, our results contribute to the theoretical debate regarding quality choices on markets with imperfect competition.

Physician Group Practices and Technology Diffusion: Evidence from New Antidiabetic Drugs

Kathleen Nosal (U Mannheim)

One way that physicians learn about new treatments and technologies is through interactions with other physicians. Such interactions are shaped, in part, by the structure of group medical practices: physicians who work in the same practice have more opportunities to exchange ideas. To quantify the importance of physician practices in technology adoption, I analyze physicians' adoption of three new anti-diabetic drugs introduced between 2009 and 2011 using data on the universe of Medicare Part D prescriptions. I construct the network of colleague relationships through practice memberships, and test whether physicians are more likely to adopt the new drugs if they have colleagues who do so. To distinguish the causal effect of interest from other sources of correlated decisions within practices, I use instrumental variables and also a panel data approach with physician and drug fixed effects. The instruments exploit the network structure, using characteristics of second degree connections (colleagues of colleagues) as a source of exogenous variation. The results indicate that having a colleague who prescribes the drug is associated with a large increase in a physician's probability of adopting the drug.

Informational Control and Collusive Supervision

Andreas Asseyer (Humboldt-Universität zu Berlin)

This paper studies optimal informational control in contracts under the threat of collusion and its implications for organizational form. I consider a principal-supervisor-agent model: The agent is privately informed about his costs to realize a project for the principal. The supervisor observes a signal that is informative of the agent's costs. The supervisor and the agent may collude. The principal sets a contract and designs the supervisor's signal without being able to observe it. I analyze the principal's trade-off between information elicitation and collusion prevention: A well-informed supervisor may provide good advice but can also organize collusion effectively. I study optimal signals and show that the principal wants to withhold information from the supervisor. Balancing upside potential and downside risk, the principal creates signal realizations of equal value that optimally incentivize the supervisor to participate in the contract. Given the optimal signal, the optimal contract can be implemented through delegation whereby the principal authorizes the supervisor to contract with the agent. I discuss implications for public procurement if corruption is an issue.

Strategic Experimentation with Asymmetric Information

Miaomiao Dong (Bocconi University)

This paper studies strategic experimentation between two players, with one player initially better informed about the state of nature. They are otherwise symmetric, and observe past experimentation decisions and outcomes. I construct an equilibrium in which a mutual encouragement effect arises: as the public information becomes discouraging, the informed player's high effort continuously brings in good news, encouraging the uninformed player to experiment; in return, the uninformed player's experimentation pattern yields an increasing reward, encouraging the informed player to experiment. Due to this effect, players' total effort can increase over time, and the uninformed player may grow increasingly optimistic, despite the discouraging public information. Moreover, creating information asymmetry improves ex ante total welfare when the informed player's initial signal is sufficiently precise.

Incentives and information order with applications

Michiko Ogaku (Waseda University)

This paper analyses a career concern model in which authority chooses a dis- closure rule under which an individual will work hard induced by reputational concerns. We compute the individual's incentive and compare two rules: full and garbled disclosure rules. Our main result, restricted to a standard model, shows that the incentive intensity is monotone with respect to the Blackwell's informativeness. We focus on the similarity of the impact of informativeness on implicit incentives and contract efficiency, and lead to the conclusion that if reputational reward functions are highly convex, an improved transparency could hurt both current and potential contracting parties.

Impact on domestic and foreign innovation activities of the intellectual property tax regime in Belgium, China, the Netherlands and Spain

Martin Falk (WIFO)

This paper investigates two things: i) the impact of the introduction of the patent/ intellectual property (IP) box regime on the number of patent applications and R&D intensity in four industrialised and emerging countries,

and ii) the impact on FDI inflows in R&D, design, testing and software services. The data is based on about 2000 regions and 1330 cities in 30 industrialized countries. Using the difference-in-differences method with control variables, we find that the introduction of the patent/IP-Box regime in China is associated with a strong increase in patent applications at the European Patent office (+75 percent). Positive but smaller effects are also found for patent applications of inventors with residence in Spain. In China, there is also a positive impact on domestic R&D intensity at the regional level. Furthermore, only once did the introduction of the patent/IP Box regime lead to an increase in FDI inflows in R&D and related activities or FDI in software: the case for FDI in R&D in the Netherlands. The results are robust when control variables are accounted for (capital city, presence of local universities, R&D tax incentives and part of special economic zone in China).

Does Regulation drive International Cooperation? Evidence from the Pharmaceutical Research

Anna Rita Bennato (Loughoborough University and Centre for Competition Policy)
Laura Magazzini (University of Verona)

Whether an increased stringency of the Intellectual Property Rights (IPR) system is apt to stimulate collaborative research between developed and emerging economies is not clear. In this paper, we empirically investigate how joint R&D investments in the pharmaceutical sector are affected by the regime of IPR in force in the two countries involved in the collaboration. Looking at the joint signature of both patent documents and scientific articles by researchers located in developed and emerging markets, our investigation indicates two opposite effects: joint publications are fostered by stricter IPR rules, whereas joint patents are discouraged. A recently proposed theory provides a plausible rationale for this apparently contradicting result.

The Effect of Fee Shifting on Litigation: Evidence from a Court Reform in the UK

Christian Helmers (Santa Clara University)

We study a U.K. court reform that established a cap on the amount of costs that a successful litigant may recover in a case litigated in the Patents County Court (PCC, now the IP Enterprise Court). We first build a theoretical model exploiting the fact that the introduction of a costs cap is equivalent to an intermediate cost allocation rule falling between the English and American Rules. Our model suggests that the impact of the introduction of such a fee-shifting rule on the number of claims filed and the settlement rate is ambiguous. It shows, however, that the effect of the costs cap on IP holders' incentives to file a claim is stronger for smaller IP holders. Our empirical analysis of the impact of the costs cap takes advantage of our ability to compare IP litigation in the PCC with IP litigation in the High Court of England and Wales, which was not directly affected by the reform. We find that the costs cap increased the number of cases filed by smaller companies and decreased the rate of settlement.

Strategic responses to cultural quotas evidence from French radio

Margaret Kyle (MINES ParisTech)
Dandan Niu (Mines Paristech)

This paper empirically examines the strategic responses of French radio stations to "cultural quotas" that promote Francophone music. Using detailed data on playlists of major radio stations in France from 2013-2016, we show that stations vary in their compliance with the law. In addition, stations have some scope for adjusting their playlists subject to the quota constraints. For many stations, the realized audience for Francophone music

is lower than would be the case in the absence of these adjustments. We then estimate a regression model to show how French stations adjust content in response to the size of their audience, using instrumental variables to address the endogeneity of demand. The results show that although quotas increase the diffusion of Francophone music, stations reduce Francophone play during times of peak demand, which has a countervailing effect on the exposure of French music. We further show that these strategic responses are more pronounced for stations that gained audience during our sample period than for stations that lost audience. Our early results suggest that strategic responses to cultural quotas have a statistically and economically significant effect on the exposure of Francophone music.

The Impact of Official and Informal Free Goods: An Empirical Analysis of Creative Industries in Japan

Shinichi Yamaguchi (International University of Japan)
Hirohide Sakaguchi (Keio University)
Iyanaga Kotaro (Keio University)
Tatsuo Tanaka (Keio University)

Considering their complementary and substitution effects, we discuss the impact of official and informal free goods on the consumption of paid goods in three creative industries in Japan. We employ an instrumental variables method and a large questionnaire dataset. Official free goods have a significant positive effect on paid goods in the music industry, with an elasticity of 0.11, but no significant effect in the video and book industries. Informal (pirated) free goods have no significant effects in the book industry, but have a significant negative effect in the music and video industries, with elasticities of -0.23 and -0.19, respectively.

Bias in the Choice of Product Differentiation: Evidence from the Taiwanese Media Industry

Ching-I Huang (National Taiwan U)

In this study, we empirically analyze the choice of ideology position in the industry of political talk show programs in Taiwan. We propose a structural model to characterize viewers’ program choice and use the estimated model to investigate a program’s ideology choice. Our estimation result indicates that viewers are more likely to watch a program which offers a slant closer to their own political preference. We also find that the observed ideology positions among political talk show programs are too extreme when comparing to their viewership-maximizing benchmark.

Endogenous Mergers and Leadership Acquisition in Cournot Oligopolies

Walter Ferrarese (Tor Vergata)

The literature on mergers in Stackelberg markets exogenously assumes the number of leaders and followers alongside the number of firms involved in a merger. We endogenize mergers in a game where firms decide whether participating or remaining outside a merger and where each merged entity acquires the leadership from a pre-merger symmetric Cournot-Nash market. If only one merger is allowed, in equilibrium, either a bilateral or a coalition involving the majority of the market can form. Even if multiple mergers are allowed, in equilibrium a single merger takes place, whose size is affected by the possibility of having more than one coalition. The model offers an explanation of why bilateral mergers are observed in almost every market, even where synergies are unlikely, and that in case of large mergers, remaining outside may be more profitable than participating. Welfare implications are discussed.

Mergers, merger waves and the distribution of market valuations

Zafeira Kastrinaki (School of Management, University of Bath)
Paul Stoneman (University of Warwick)

This paper explores the determination of M&A activity with particular emphasis upon the role played by the dispersion of the market valuations of firms. A conceptual framework is employed that considers the behaviour of sellers as well as bidders, draws attention to the separation of ownership and control, and treats mergers as bidding games. The probability that a firm will be taken over at time t is predicted, inter alia, to be positively related to the variance and the mean of the distribution of market to book values across all firms at that point in time and negatively related to the individual target firm's valuation. Innovative empirical analysis of a sample of UK quoted firms 1990 – 2009 provides support for these hypotheses. Further analysis indicates that although mergers may be partly driven by attempts to shift resources to more productive uses there is also evidence that the over and under misvaluation of buyers and sellers impacts upon the level of M&A activity.

Welfare Decreasing Endogenous Mergers between Producers of Complementary Goods

Pedro Barros (Universidade Nova de Lisboa)
Duarte Brito (Universidade Nova de Lisboa)
Helder Vasconcelos (Universidade Do Porto)

This paper investigates the competitive effects of mergers involving producers of complementary goods in a setting where: (i) consumers need to purchase two components to make up a system; and (ii) there is competition between two vertically differentiated producers of one of the components whereas the second (must-have) component is monopolized. We find that the (privately profitable) merger involving the low quality producer of one component and the monopolist producer of the other component may decrease both consumers' surplus and social welfare for parameter values such that this merger is in the core.

Relational Contracts, Procurement Competition, and Supplier Collusion

Giacomo Calzolari (University of Bologna)
Giancarlo Spagnolo (Stockholm School of Economics)

We study the tension between competitive screening, contract enforcement and supplier collusion where a buyer trades repeatedly with one among several suppliers, moral hazard and adverse selection coexist, and non-contractible tasks are governed by relational contracting. Open competition is optimal when suppliers are few and heterogeneous and non-contractible quality is not too important. Otherwise, the buyer optimally restricts competition to a subset of regular and frequently interacting suppliers. These policies facilitate suppliers' collusion but we show that the buyer may benefit from it enforcing even higher non-contractible tasks. These results shed light on a number of puzzling observations connecting the worldwide "auto parts" cartels, Toyota's "lean" management practices and the persistent trade imbalance between Japan and the US in the 1990s.

Optimal Cost Overruns: Procurement Auctions with Renegotiation

Fabian Herweg (U Bayreuth)
Marco Schwarz (LMU Munich)

Cost overrun is ubiquitous in public procurement. We argue that this can be the result of a constraint optimal award procedure when the procurer cannot commit not to renegotiate. If cost differences are more pronounced for more complex designs, it is optimal to fix a simple design ex ante and to renegotiate to a more complex and costlier design ex post. Specifying a simple design initially enhances competition in the auction. Moreover, the procurer cannot benefit from using a multi-dimensional auction, as the optimal scoring rule depends only on the price.

The Role of Budget Constraints in Pre-Commercial Procurement

Olga Chiappinelli (DIW Berlin)
Malin Arve (NHH Norwegian School of Economics)

We study a two-stage contest that captures important features of Pre-Commercial Procurement. We show that introducing budget constraints leads to a potential non-monotonicity in non-constrained firms' effort.

Gizmos

Daria Khromenkova (University of Mannheim)

I analyze a problem of a monopolist seller facing consumers who are unsure about their needs. In particular, when they have to make a decision for the first time, consumers are not sure whether they value a fancy version of a product or whether a standard version suffices. They learn only when they have the product. As consumers learn and if they have to replace the product they have, their new decision can be an upgrade or a downgrade over the initial one. I show that consumers' adoption strategy takes a simple form. It follows a cut-off rule which depends on the prices posted by the seller. I find that the seller always finds it optimal to sell both versions of the product.

Minimum Quality Standards and Non-Compliance

Jan Voßwinkel (NGU | Nuertingen-Geislingen University)
Laura Birg (U Göttingen)

This paper studies the effect of non-compliance with a minimum quality standard on prices, quality, and welfare in a vertical differentiation model with a high quality firm and a low quality firm. Non-compliance with a minimum quality standard by the low-quality firm reduces quality levels of both firms and shifts demand from the low-quality firm to the high-quality firm. Under non-compliance, an increase in the standard increases the quality of both products and shifts demand from the high-quality firm to the low-quality firm. An increase in monitoring effort decreases the quality level of the low-quality firm and shifts demand from the low-quality firm to the high-quality firm.

Experience goods and provision of quality

Klaus Kultti (university of Helsinki)

We study a where there are buyers with unit demands and sellers with unit supplies. The sellers may produce a high- or a low-quality good. The buyers get an informative signal about the quality. This is the model of Delacroix and Shi (2013) except that their signalling technology is such that buyers either get a completely revealing signal or noise, while our signalling technology is such that high and low signals are always got with positive probability. As a consequence, whenever high-quality goods are produced also low-quality goods are produced. Delacroix and Shi focus on price posting, while we study trading by auctions.

Welfare in the Auction After-Market

Bernhard Kasberger (U Vienna)

This paper studies auctions in which firms bid for multiple units that reduce their marginal costs in the after-market. The values of the bidders are expected profits in the after-market. The frequent objective of auctions, “efficiency”, translates into maximizing industry profits. Expect in one special case, firms have preferences over allocations, whereas traditionally preferences over quantities are assumed. Consumers in the after-market have non-trivial preferences over allocations that are not represented in the auction. It is shown that consumer surplus can be maximized, but also minimized by “efficient” auctions. Moreover, demand reduction, a negative effect in traditional auctions models, can actually unambiguously increase consumer surplus. The role of remedies such as caps, as well as the amount of information released during the auction, are discussed.

The Price of Anti-Competitive Behaviour: Evidence from the U.S. Airline Industry

Yannis (I.) Kerkemezos (Erasmus University Rotterdam)

This paper presents a novel strategy to empirically identify engagement in anti-competitive behaviour by firms in monopoly and duopoly markets and quantifies the resulting price premium that consumers pay. This is done by examining transitions across market structures that take place because of firm entry or exit and classifying different types of markets within a given structure based on their structural history. Using panel data from the U.S. airline industry between 1993 and 2014, we find that a “quiet-life” duopoly prices significantly higher compared to a duopoly that comes about by entry in monopoly, and that a “quiet-life” monopoly prices significantly lower compared to a monopoly that comes about by exit in duopoly, but still significantly higher than both types of duopoly. These effects, both economically and statistically significant, suggest that collusion is likely to occur in duopoly markets and that entry deterring strategies, such as limit pricing, are likely to be deployed in monopoly markets.

Markets Take Breaks: Dynamic Price Competition with Opening Hours

Steffen Eibelshäuser (Goethe University Frankfurt)
Sascha Wilhelm (Goethe University Frankfurt)

We develop a model of dynamic price competition in which the intraday interaction among retailers is paused at regular closing times and resumed the next day. In this non-stationary market environment, there exists a Nash equilibrium with repeating price cycles of deterministic length. The equilibrium is salient in the sense that it is a repeated version of the unique subgame perfect equilibrium of the daily stage game and, as such, does not require collusive behavior. We test and verify the equilibrium prediction as well as a number of additional model predictions using an extensive dataset on the German retail gasoline market. Furthermore, we perform

a structural estimation of the model to evaluate several policy counterfactuals. At the estimates, regulatory interventions such as price setting restrictions or increased market transparency lead to higher average retail prices and harm consumer welfare.

Wholesale Pricing with Incomplete Information about Private Label Products

Johannes Paha (University of Giessen)

This paper provides a theoretical model analyzing the optimal wholesale price set by a monopolistic manufacturer for its high-quality, branded product that is sold to final customers by a monopolistic retailer. The bargaining power of the downstream retailer is strengthened by offering also a low-quality, private label substitute whose production costs are unknown to the upstream manufacturer. The model shows that all-units discounts granted by the upstream manufacturer to the retailer conditional on being large (e.g., possessing a high market share) do not result from the buyer power of the retailer but are a means of the upstream firm to maximize its profit by extracting the retailer’s informational rent.

Naked Exclusion under Exclusive-offer Competition

Hiroshi Kitamura (Kyoto Sangyo University)
Noriaki Matsushima (Osaka University)
Misato Sato (Osaka University)

This study constructs a model of anticompetitive exclusive-offer competition between two existing suppliers. Although previous studies assume that one of the suppliers is a potential entrant, which cannot make an exclusive offer, we assume that all suppliers are existing firms. When suppliers compete imperfectly, the exclusive-offer competition reduces the supplier’s profit for the case where it fails to exclude the rival supplier, which induces each supplier to make a better exclusive offer. We point out that this leads to an exclusion equilibrium to exclude the existing supplier even when there is no exclusion equilibrium to exclude the potential entrant.

Promotional Allowances as a Rationale for Below-Cost Pricing

David Martimort (Paris School of Economics)
Jerome Pouyet (Paris School of Economics)

We consider the vertical relationship between upstream manufacturers and retailers, with two key features. First, manufacturers value the effort of retailers to promote their products through advertising campaigns, adequate disposal and the like. Although, those dimensions of the retailing activities can be somewhat described contractually, other dimensions remain non-verifiable and must be induced by manufacturers through a convenient design of the wholesale contracts that run their relationship with their retailers (see Section 4 for a characterization of those incentive constraints). Wholesale contracts are generally constrained and cannot allocate freely surplus between manufacturers and retailers. To illustrate, fixed fees are generally absent or limited in size and, in our context, wholesale contracts can thus rely only on two instruments. First, a wholesale price that specifies the cost for the retailer of supplying the manufacturer’s good. Second, a backwards rebates that applies in case the demand has been particularly high, thanks to the retailer’s promotional effort. This model unveils how the bargaining power between upstream manufacturers may impact on retail prices, modify the promotional efforts exerted by retailers and redistributes downstream

market shares in competitive environments where those retailers compete with vertically integrated supply chains.

Political Connections and Market Structure

Lorenzo Magnolfi (University of Wisconsin-Madison)
Camilla Roncoroni (University of Warwick)

This paper empirically investigates how political connections affect market structure and quantifies the welfare cost of political influence. We focus on a specific industry, grocery retail in Italy, where the largest firm is a network of consumer cooperatives that has historical links to political parties. We estimate a game-theoretic model that accounts for the interdependence among firms' entry decisions and for the effect of political connections, allowing for connections to influence both firms' payoffs from entry and their information sets. In a counterfactual, we examine the effects of removing political connections. We find that consumers suffer substantially in markets where connections act mainly as barriers to entry of competitors of the connected firm, but can also stand to gain from connections where links with local politicians help the connected firm to overcome the burden of entry regulation.

Is There a Causal Effect of Concentration on Persistent Profitability Differentials?

Jan Keil (The University of the West Indies at Mona)

This article searches for a causal effect of market share concentration on estimates of persistent profitability differentials developed by Mueller (1977, 1986). I offer solutions to identification problems that plague all related analyses by applying IVs and a natural experiment, by taking advantage of the time structure of panels, new control variables and by addressing several data quality and measurement complications. This is the first study that explains estimates of persistent profit differentials using business segments data. Testing linear relations, critical concentration levels and interactions with mobility barriers I find no evidence that concentration has any positive effect on long-run profitability differences. Results rather tend to point to a statistically and economically significant negative causal effect.

Price Sensitivity to Supply Traded Under Alternative Mechanisms in the New England Fish Industry

David Genesove (Hebrew U Jerusalem)

The New England fishing industry from 1982-1992 demonstrates the effect of different trade mechanisms on price determination. Prices in Gloucester are more responsive to changes in supply landed in Boston than to supply landed in Gloucester itself. The underlying cause for this phenomenon lies in the different mechanisms used in the two ports – an auction in Boston, long-term non-contractual relationships in Gloucester –, and the proximate cause in the use of the Boston price as an informal index for the negotiated price in Gloucester. This pricing convention makes auction supply more "high-powered" than supply traded under long-term, bilateral relationships.

Deceptive Products and Competition in Search Markets

Tobias Gamp (University College London)

We study a search market where firms have a choice between offering either efficient, high quality ("candid") products or inefficient, low quality ("deceptive") products which some ("naive") consumers misperceive as of high quality. We derive an equilibrium in which both business models co-exist and show that as search frictions vanish, high quality goods are entirely driven out of the market. We show that market share and price dynamics can be non–monotone in search frictions, and we argue that while policy interventions that reduce search frictions such as the standardization of price and package formats may harm welfare, a price floor regulation can improve welfare.

Promotions with Biased Consumers

Robert Edwards (University of Liverpool)

We study the effects of consumers' biases towards simple promotions on price and obfuscation decisions of retailers. Biased consumers restrict obfuscation, which improves market transparency, stimulates price competition and benefits consumers. Policies to reduce simplicity biases harm consumers. Policies that improve consumer sophistication can induce greater obfuscation by firms. We allow firms to influence consumers' biases using advertising, which generates a novel form of false advertising: Firms combine complex promotions with simple marketing. This stimulates consumer confusion whilst attracting biased individuals.

Conformism, Product Quality, and Heterogeneity

Sergey Kichko (National Research University Higher School of Economics)
Pierre Picard (Universite de Luxembourg)

The paper discusses the impact of consumer's conformism on product demand and product quality in markets with differentiated goods. It is shown that conformism to alter market prices only if consumers are heterogenous in their tastes towards product quality and degree of conformism. When consumers valuation for goods is negatively correlated to their degree of conformism, the equilibrium average product quality rises when consumers have higher degree of conformism and/or when the distribution of the latter spreads.

Why Firms Should Care for All Consumers

Lisa Planer-Friedrich (University of Bamberg)
Marco Sahm (U Bamberg)

We compare the strategic potential of Corporate Social Responsibility (CSR) and Customer Orientation (CO) as commitments to larger quantities in Cournot competition, modeled as a multi-stage game. First, in addition to profits, firms can choose to care for the surplus of either all consumers (CSR) or their own customers only (CO). Second, they decide upon the weight of this additional objective. We find that firms prefer to care for all consumers, choosing positive levels of CSR. This result provides an explanation for the recent shift from CO to CSR in both, corporate culture and economic research.

Two Models of Inter-University Competition: Predicted Capacities, Tuition Fees, and Enrollment

Marie-Laure Cabon-Dhersin (CREAM, University of Rouen)

Jonas Didisse (University of Rouen)

This paper compares two models in which universities compete either through fees (under Bertrand competition, the Anglo-Saxon model) or through enrollment numbers (under Cournot competition, the European model) in a setting where their capacity constraint is chosen endogenously. The results show that, under Bertrand competition with sufficiently convex costs, universities choose a low capacity, which minimizes their costs, and set high fees. In this case, introducing a new university is welfare-improving. Conversely, competition over enrollment leads to higher capacities and a greater number of students per university, which may be detrimental to welfare.

Cost-reducing investments under partial cross-ownership

Sandro Shelegia (Universitat Pompeu Fabra)
Yossi Spiegel (Tel Aviv U)

We examine the effects of partial cross ownership (PCO) among rival firms on the incentives of firms to make cost-reducing investment. We show that holding fixed firms' costs, PCO may lead to higher prices, but then it may also encourage cost-reducing investments and may thereby lower prices when firms costs are endogenized.

Parallel sessions / Friday 1 September 2017 / 14:00 – 15:30

Rent Overestimation in Discriminatory Share Auctions

Samuel Häfner (University of Basel)

This paper analyzes a discriminatory share auction, in which bidders submit vectors of price-quantity pairs tracing out non-increasing step functions with a bounded number of steps. I show how the individual bidders' optimality conditions can be used (i) to estimate the degree of best response violations among the submitted bids, and (ii) to estimate tight upper and lower bounds on the marginal valuations between the submitted quantity points. Proofs of concept are given with data from Swiss meat import quota auctions. In particular, I use the estimator of best response violations to give evidence that the bidders believe the numbers of participants in the auctions to be higher than they actually are, and bid accordingly. Not accounting for this anomaly leads to overestimated realized net rents in the auctions. By using the bounds on the valuations, I can show that the estimation error is substantial.

An Evaluation of a Bidder Training Program

Dakshina De Silva (Lancaster University)
Tim Hubbard (Colby College)
Georgia Kosmopoulou (University of Oklahoma)

In an effort to accommodate a change in the U.S. Federal Highway Administration's goals towards "race-neutral methods" concerning the involvement of Disadvantaged Business Enterprises in procurement contracting, the Texas Department of Transportation created a Learning, Information, Networking and Collaboration (LINC) bidder training program. Using ten years of data, we examine the effects this program had on bidder behavior, project costs for the government, and the ability of these firms to compete in the procurement contracting industry. We distinguish between ineligible firms as well as eligible firms that undergo training and those that don't, to consider empirical models which allow for potential asymmetries across these bidder groups. Unlike other programs that target these firms, we find that LINC generated substantial savings for the state through direct competition effects stemming from aggressive bidding of LINC graduates but also via indirect competition effects—by inducing other firms to bid more aggressively. These changes generate benefits to the state which come at a very low cost.

Evaluation of bidding groups in first-price auctions

Klaus Gugler (WU Vienna)
Michael Weichselbaumer (Vienna University of Economics and Business)
Christine Zulehner (Goethe University Frankfurt)

In this paper, we analyse bidding groups that participate in procurement auctions. Our main question is to ask, whether in the absence of the joint bid, there could have been two or more independent bids. We utilize data from the Austrian construction sector and estimate models of first-price sealed-bid auctions with endogenous entry. Based on estimated bidding distributions and bidders' entry behavior, we run counterfactual simulations and aim to disentangle the market power effect from potential cost efficiencies.

Bank funding shocks and firm performance: New evidence from the sovereign debt crisis

Serafeim Tsoukas (University of Glasgow)

Using a large panel of unquoted firms over the period 2006-14, this paper examines the impact of bank shocks on firms' performance in Portugal. We present evidence that a negative bank funding shock is likely to increase the probability of firm failure and reduce employment and productivity. When we distinguish between financially constrained and unconstrained firms, we find that the former group of firms exhibits a higher sensitivity of firm performance to bank shocks.

The Effect of Subsidies on New Ventures' Access to Bank Loans

Hanna Hottenrott (Technical University of Munich)

Since access to financial resources is crucial for young firms to develop, governments have increasingly initiated selective support programs to foster innovation and growth of start-ups. For such support to become effective it is, however, important that firms can augment these publicly provided resources with additional means, at least in the longer-run. This study examines the effect of new ventures' subsidy receipt on the use of long-term bank loans. Studying 3,839 new ventures founded between 2005 and 2009 in Germany, we test whether the subsidy itself may facilitate access to bank loans. Applying econometric techniques that account for the endogenous nature of a subsidy receipt, we find support for the hypothesis that subsidized young firms are more likely to use bank loans and obtain a larger share of their financing mix from banks and that this effect is stronger in highly information-opaque sectors. The results suggest that the effect of subsidies may be attributed to a certification effect providing relevant information for banks' loan assessment procedures.

The impact of the financial crisis on financing of innovations

Marek Giebel (TU Dortmund), Kornelius Kraft (University of Dortmund)

The financial crisis 2008-2009 affected the banks in a variety of ways. We apply indicators to the impact the crisis had on the refinancing of individual banks using matched data on German Banks and their corporate customers. Next, we analyze whether the effect on banks is passed on to their corporate customers and show that innovative firms realize lower innovation expenditures. Hence, access to external financing and problems in that respect have a significant impact on innovation.

The Effect of Mergers on Retail Prices: Evidence from Germany

Dennis Rickert (DICE; University of Düsseldorf)
Jan Philip Schain (Düsseldorf Institute for Competition Economics)
Joel Stiebale (Universitity of Duesseldorf)

This paper estimates the effects of a merger among two German retail chains on consumer prices. We exploit the fact that retailers set prices at a local level and use a difference-difference estimator to compare regional markets with pre-merger overlap of acquirer and target to a control group of products in unaffected markets. Our results indicate a price increase due to the merger, where this price increase is solely driven by supermarkets, but not by discounters. We also provide evidence that retail prices were more likely to increase

in local markets with high expected changes in concentration and that remedies imposed where not sufficient to offset anti-competitive effects.

Import Pressure and Merger Evaluation: A Case of Japanese Copper Tube Industry

Tsuyoshi Nakamura (Tokyo Keizai University)
Hiroshi Ohashi (Faculty of Economics, University of Tokyo)

This paper empirically analyze how much import pressure restrains the rise in product price after a merger. Our case is about a merger for which competition policy authority actually reviewed whether import pressure existed or not. We construct and estimate a model with import supply function, which reflects the impact of import pressure. This model is simple, but credibly replicates the actual market in terms of key variables such as price, domestic production, and import. Then we conduct merger simulations and obtain the results against the existence of import pressure.

Post-M&A Synergies and Changes in Development Trajectory of Pharmaceutical Firms

Hendrik Meder (Charles River Associates, KU Leuven)

We investigate the redeployment of resources by the merging firms, relatively to the behaviour of non-merging firms in the pharmaceutical sector. We question whether and how the novelty of resources (coming from an external target) may provide acquirers an advantage at generating recombinative synergies compared to non-acquirers. We distinguish between different types of overlap of two merging firms: An overlap within a pharmacological sub-field in which both merging firms actively pursuing drug development pre-M&A; overlap within a therapeutic field (in two neighbouring pharmacological sub-fields); and an indirect overlap through joint activities and overlaps in at least one neighbouring field. The results show that merging firms change development trajectory significantly more compared to their non-merging rivals and they have the tendency to invest less in fields in which they overlap and tend to invest more in new but related fields.

Can the Private Sector Ensure the Public Interest? Evidence from Federal Procurement

Leonardo Giuffrida (University of Rome Tor Vergata)
Gabriele Rovigatti (University of Rome Tor Vergata)

We empirically investigate the effect of oversight on contract outcomes in public procurement. In particular, we stress a distinction between public and private oversight: the former is a set of bureaucratic checks enacted by contracting offices, while the latter is carried out by private insurance companies whose money is at stake through so-called surety bonding. We analyze the universe of U.S. federal contracts in the period 2005-2015 and exploit an exogenous variation in the threshold for both sources of oversight, estimating their causal effects on costs and execution time. We find that: (i) public oversight negatively affects outcomes, in particular for less competent buyers; (ii) private oversight has a positive effect on outcomes by affecting both the ex-ante screening of bidders – altering the pool of winning firms – and the ex-post behavior of contractors.

Competition in London local bus tendering

Elisabetta Iossa (University of Rome Tor Vergata)

Michael Waterson (U Warwick)

Under recurrent procurement, the awarding of a contract to a firm may put it in an advantageous position in future tenders, which may reduce competition over time. The objective of this paper is to study the dynamics of competition for tendered contracts, focusing on factors that may generate incumbent advantage. The paper then applies insights from that literature to analyse empirically the evolution of competition in the market for local bus services in London.

Privacy and Quality

Yassine Lefouili (Toulouse School of Economics)
Ying Lei Toh (Toulouse School of Economics)

This paper analyzes the effects of a privacy regulation that caps the level of data disclosure on investment in quality and social welfare. We develop a model in which a monopolist offers a service for free to consumers with heterogeneous privacy preferences, and derives revenues from disclosing consumer data to third parties. We assume that the users of the service choose how much information they provide to the firm. In this setting, a regulation of the disclosure level can alter both the extensive margin effect and the intensive margin effect of an investment in quality. If the market is fully covered, we show that a welfare-maximizing regulator who can commit ex ante to a disclosure cap finds it optimal to set a cap when the complementarity between quality and information is not too strong. If the market is partially covered, then ex ante privacy regulation may be socially desirable even when quality and information are strongly complementary. Finally, we extend our analysis to the case where the regulator maximizes consumer surplus, and to a scenario where the regulator sets a disclosure cap ex post.

Online search tracking and consumer privacy

Marcel Preuss (University of Mannheim)

Tracking technologies enable sellers to observe a consumer’s browsing history on the internet. Consumers are heterogeneous regarding how selective their taste is. In a framework in which consumers search sequentially for prices and match utilities, tracking enables sellers to learn about a consumer’s conditional willingness to pay. I find a unique equilibrium exhibiting an increasing price path. Moreover, I endogenize the consumer’s choice to disable tracking. Interestingly, the entire browsing history is disclosed in equilibrium despite sellers engaging in price discrimination. While consumers are always made better off compared to no tracking, the effect on profits depends on search costs.

Buyer-Optimal Signals in Sequential Screening

Jonas von Wangenheim (Humboldt Universität Berlin)

In many trade environments – such as online markets – buyers fully learn their valuation for goods only after contracting. The sequential information structure enables a monopolist to reduce buyers’ information rents, relative to fully informed buyers. Would more precise information at the contracting stage always benefit the buyer? Employing a classical sequential screening framework, I find that buyers prefer to remain partially uninformed, since such an information structure induces high participation and low prices. For the buyer-

optimal ex-ante information, trade is efficient, and the seller only extracts the static monopoly profit. Further, I fully characterize all possible surplus divisions that can arise in sequential screening for a given prior.

Import Competition and Vertical Integration: Evidence from India

Joel Stiebale (Duesseldorf Institute for Competition Economics (DICE))
Dev Vencappa (University of Nottingham)

Recent theoretical contributions provide conflicting predictions about the effects of product market competition on firms' organizational choices. This paper uses a rich firm-product-level panel data set of Indian manufacturing firms to analyze the relationship between import competition and vertical integration. Exploiting exogenous variation from changes in India's trade policy, we find that foreign competition, induced by falling output tariffs, increases vertical integration by domestic firms. The effects are concentrated in rather homogenous product categories, among firms that mainly operate on the domestic market, and in relatively large firms. Our results are robust towards different sub-samples and hold with or without conditioning on various firm- and product-level characteristics including input tariffs and firm-year fixed effects. We also provide evidence that declining output tariffs spur R&D investment by some firms.

Unsuccessful Vertical Integration? Evidence from the U.S. Carbonated Soft Drink Industry

Takanori Adachi (Nagoya University)

This paper empirically illustrates new aspects of vertical mergers that may hurt consumer welfare other than foreclosure and misuse of rivals' information by allowing the possibility that a vertical merger turns out detrimental to the merged entity. My empirical results show that one company's vertical merger is consistent with the efficiency-based view: it raised its market shares, lowering its product prices. In addition, whether its bottler also distributes another company's products has little effects on its prices and market shares. These results hold qualitatively if heterogenous time trends and non-uniform weighting across the treatment and the control groups. However, it is less apparent that the other big company's vertical merger improved its production. As opposed to the efficiency-based view of vertical integration, its prices did not decrease, though its market shares rose. More importantly, its vertical merger increased another company's shares by 5 to 6 percent (with a slight price increase) in counties where it takes charge of that company's distribution, and this effect is statistically significant, remaining true with the robustness checks described above. This contrast is also observed in a complementing event study analysis.

Agency Pricing and Bargaining: Empirical Evidence from the E-Book Market

Babur De los Santos (Clemson University)
Daniel O'Brien (Bates White)
Matthijs Wildenbeest (Indiana U)

In 2012 the US Department of Justice banned the use of agency contracts in the market for e-books for a period of two years, which meant the return to more traditional wholesale- type contracts. Agency pricing has recently made a comeback in this market after the two- year ban on its use expired in 2014. Using a unique dataset of e-book prices both before and after this recent change in selling method, we show that prices went up substantially following the shift at Amazon but remained relatively flat at Barnes & Noble. To explain these price changes, we structurally estimate a bargaining model in which publishers bilaterally bargain with retailers

over input contracts. Our estimates of the bargaining power parameters indicate that the retailers have more bargaining power than the publishers. Our findings show that the bargaining model gives a better fit to the data than a model with take-it-or-leave-it input contracts. Counterfactual simulations indicate that reinstitution of most favored nation clauses, which were banned in 2012 for a period of five years, would lead to price increases of close to eight percent.

Outsourcing and industry structure

Geert Van Moer (University of Antwerp)

This paper studies vertically integrated firms that can horizontally subcontract production before competing downstream. I show that diminishing returns can explain a set of industry structures where outsourcing harms production efficiency and consumers. The horizontal relationship need not be observed in equilibrium. The reason a horizontal subcontractor supplying the rival may choose not to be active downstream is because of increasing marginal costs. Given that it already supplies the rival, it can be too costly to offer additional production downstream. A higher market-clearing price can compensate firms for the increased costs that arise from inefficiently raising the subcontractor’s production.

Technology misallocation in vertical relations

Henrik Vetter (Royal Library, Aarhus)

We consider a vertical relationship where an upstream monopolist supplies input to downstream duopolistic firms. The monopolist chooses between a technology with a low and a technology with a high unit cost. We argue that the monopolist’s technology choice co-determines downstream market conduct. On the basis of this we give conditions under which the upstream monopolist profit maximizes by using the high cost technology even when technologies are equally costly. Taking into account that the technology with the low unit cost is more costly than the technology with the high unit cost, we show when endogenous downstream competition gives rise to technology misallocation in a qualified way.

Coordinating R&D efforts for quality improvement along a supply chain

Luca Lambertini (U Bologna)

The optimal design of two-part tariffs is investigated in a dynamic model where two firms belonging to the same supply chain invest in R&D activities to increase the quality of the final product. It is shown that the replication of the vertically integrated monopolist’s performance can be attained using a two-part tariff in which the fee is a linear function of either the upstream R&D effort or product quality itself. The possibility of relying on R&D figures appearing in the upstream firm’s balance sheet is desirable as quality enhancement might not be observable or verifiable.

Go East? Firm structure and the location decision of German manufacturing firms

Astrid Krenz (University of Goettingen)

More than 25 years after German reunification a divide in terms of firms' economic activities and performance between the East and West of Germany still exists, and the gap appears not to be closing. In the present contribution, the location decision of new firm activity in the German regional economy, differentiated by firm structure, is investigated using the detailed regional dimension of a novel, comprehensive, official firm-level dataset for German manufacturing firms from the Federal Statistical Office. Results reveal that agglomeration economies play a significant role for the location choice of small firms, but not for medium-sized and large firms. Whereas the market potential exerts a significant positive impact for all firms, labor costs do not exert a significant impact on large firms' location decisions. Differential effects are found in an East-West comparison. The infrastructure, in terms of a region's accessibility, plays an important role for high-technology firms choosing to localize in a region in Western Germany and for the decision of firms to localize in Eastern German regions. As a policy recommendation it appears necessary to improve in particular the local infrastructure in terms of the road network to foster the setting up of firm activity in Eastern German regions.

Location, location, location … Do universities matter for foreign R&D?

Dolores Añon Higon (Universitat de Valencia)
Alfonso Díez Minguela (Universitat de València)

This paper explores the extent to which academic strength influences the location of foreign R&D. To do so, we use a panel dataset with information on the location choices of foreign R&D establishments within Spain from 2005 to 2013. Academic strength is measured with publications and citations of each regional higher education system. In general, we find empirical evidence in support of our central hypothesis. The probability that a foreign R&D establishment locates in a region increases with the region's academic strength. Regional market potential, technological strength and agglomeration economies are also important determinants of foreign R&D location choices.

Firm Heterogeneity, Technological Adoption, and Urbanization: Theory and Measurement

Alex Chernoff (Bank of Canada)

This paper develops a tractable theoretical framework for studying the interaction between economic geography, firm heterogeneity, and technological adoption. The theoretical model is used to derive a statistic that summarizes the welfare gains from the introduction of a new technology. I estimate the welfare statistic using nineteenth century firm-level data on mechanical steam power adoption in the Canadian manufacturing sector. I exploit exogenous variation in geography to estimate several structural parameters of the model. The results indicate that the introduction of steam power resulted in a 21.9 percent increase in firm-level productivity, and a 5.8 percent increase in welfare. To evaluate the contribution of steam power to urbanization, I compare the model predicted versus actual growth in population density for 440 Canadian townships in the mid-nineteenth century. The two series are positively correlated, however the model only accounts for a small fraction of the observed variation in township population density growth. This suggests that the introduction of steam power had a positive but economically small effect on urbanization during the mid-nineteenth century.

Endogenous location choice in the presence of R&D spillovers

Anna Stepanova (University of Kent)

We analyze a three stage game in which firms choose location, choose R&D and then compete in quantity. We find that firms will typically have an incentive to agglomerate because of R&D spillovers. Social welfare, however, is maximized for a lower level of spillover. Agglomeration may, therefore, be socially inefficient. This is because spillovers result in free-riding on R&D investments and a lower level of output.

Spatial models of switching costs

Paolo Siciliani

We adopt a spatial linear approach to model heterogeneous switching costs not only across consumers, but also across firms' customer bases. The main advantage is that we can avoid conflating the impact of switching costs with the presence of heterogeneous brand preferences. We model three different pricing regimes: uniform pricing; history-based price discrimination; and history-based price discrimination but with 'leakage', where firms cannot prevent attached customers from upgrading to the better deal launched to acquire new customers. We fully characterise equilibrium outcomes, including consumer surplus. Switching costs are unambiguously anti-competitive, but competition has a mean-reverting property. The use of price discrimination is beneficial to consumers, when compared to the regime under uniform prices. However, the imposition of 'leakage' might inadvertently dissipate much of these benefits when internal switching is much more convenient than switching (externally) to a competitor.

Optimal Destabilisation of Cartels

Ludwig von Auer (Universität Trier)
Tu Anh Pham (Universität Trier)

The literature on cartel stability sidelines antitrust policy, whereas the literature on antitrust policy tends to neglect stability issues. The present paper attempts to connect these two interrelated aspects in the context of the quantity leadership model. In this model the cartel is the Stackelberg quantity leader and the fringe firms are in Cournot competition with respect to the residual demand. We extend this model by an antitrust authority that decides on its own investigative effort and on the size of the fine that cartel members have to pay when they are detected. For testifying cartel members a leniency program is implemented. We incorporate into our framework that these three instruments of antitrust policy are not costless for society. Our model demonstrates that an effective antitrust policy exploits the inherent instability of cartels. We derive an optimal antitrust policy that usually reduces the size of the cartel, but never eliminates it.

On leniency and markers in antitrust

Konstantinos Charistos (University of Macedonia)
Christos Constantatos (University of Macedonia)

We investigate the impact of marker system on the effectiveness of leniency programs to deter unlawful collusion. Assuming that the likelihood of conviction is increasing in the number of reporting firms, optimal cartel deterrence requires the competition authority to obtain all the available evidence. We show that the introduction of the marker system has an ambiguous impact on cartel deterrence. In relation to the manner that the marker is secured and the cartel-related evidence is allocated, we derive the conditions under which allowing the first applicant to secure a marker enhances cartel deterrence.

Cost Asymmetry and Market-Dividing Cartels: Implications for Leniency Programs

Kebin Ma (University of Warwick)
Lucy White (Questrom School of Management, Boston University)

In a duopoly setting, this paper studies how cost asymmetry influences cartel stability and the effectiveness of leniency programs. It shows that when two firms collude to divide a market, the low-cost firm gains more from that collusion and has a stronger incentive to form a cartel than its high-cost conspirator does. When the cartel remains stable under leniency programs, the inefficient firm can gain a greater market share by threatening to self-report, which reduces both productive and allocative efficiencies. However, the efficient firm will foresee the hold-up problem and hence become reluctant to collude. The introduction of leniency programs therefore present a trade-off between ex-ante deterrence and ex-post efficiency. By contrast, traditional antitrust investigations are shown to both deter cartels and improve allocation. Leniency programs should be viewed as a second-best solution for budget-constrained antitrust authorities.

The Impact of Social Media on Belief Formation

Marco Schwarz (LMU Munich)

Social media are becoming increasingly important in our society and change the way people communicate, how they acquire information, and how they form beliefs. Experts are concerned that the rise of social media may make interaction and information exchange among like-minded individuals more pronounced and therefore lead to increased disagreement in a society. This paper analyzes a learning model with endogenous network formation in which people have different types and live in different regions. I show that when the importance of social media increases, the amount of disagreement in the society first decreases and then increases. Simultaneously, people of the same type hold increasingly similar beliefs. Furthermore, people who find it hard to communicate with people in the same region may interact with similar people online and consequently hold extreme beliefs. Finally, I propose a simple way to model people who neglect a potential correlation of signals and show that these people may be made worse off by social media.

Strategic grouping and the search for quality journalism

Matthew Ellman (Institute for Economic Analysis (CSIC))
Tomás Rodríguez (Universidad Autonoma de Barcelona)

This paper investigates how supply-side factors influence the search for quality content in online and offline environments. We show that lower fixed costs of online publishing reduce the incentives to bundle content, as compared to offline journalism. In the presence of asymmetric information over journalistic quality, bundling of content by journalists who publish as a group generates positive informational externalities for users. Journalists may group assortatively, better journalists having better partners. Then a consumer who discovers one quality journalist, has found several. The online environment, by reducing the pressure to group up, can lower welfare in our baseline model. We establish conditions for this result and investigate a number of countervailing forces.

Fake News in the Attention Economy

Rahul Deb (University of Toronto)
Matthew Mitchell (University of Toronto)
Mallesh Pai (Rice University)

We study a model of news provision in the spirit of Gentzkow and Shapiro (2006), but with a focus not on bias but rather on the ability to provide useful signals (real news) versus the provision of useless, possibly misleading information (fake news). News that is offered is partially verifiable, but silence does not provide any direct feedback. In a static model, this gives rise to fake news by types that may never have real news to offer. We model the dynamic reputation process of consumer attention and show that a further complication may arise: fake news may sometimes be provided alongside real news by "good" news sources in the dynamics of attention, due to lack of commitment in such rewards. The model therefore connects consumers' lower faith in all news sources with the move from committed rewards (subscriptions) to more dynamic rewards (advertisement and attention).

Non-salient Fees and Endogenous Product Differentiation

Ioannis Pappous (University of East Anglia)

Consumers often find themselves paying fees they do not understand or expect. This paper models how the firms' ability to retain profits from non-salient fees (e.g. overdraft fees) affects the equilibrium locations of products along a Hotelling line. I show that being able to retain sufficiently large profits can induce firms to compete more fiercely for consumers by locating at the centre of the line. While regulation that limits non-salient fees may benefit consumers, it can harm them if firms respond by differentiating their products.

Add-on pricing: theory and evidence from the cruise industry

Marco Savioli (University of Bologna)
Lorenzo Zirulia (U Bologna)

In many industries, firms give consumers the opportunity to add (at a price) optional goods and services to a baseline product. The aim of our paper is to provide a theoretical model of add-on pricing in competitive environments with two new distinctive features. First, we discuss the choice of offering the add-on, assuming that this entails a fixed cost. Second, we allow firms to have a varying degree of market power over the add-on. Our model shows that the conventional wisdom, according to which offering the add-on should unambiguously lower the price of the baseline product, is not always supported. In asymmetric equilibria, in which only one firm offers the add-on, baseline prices are higher if the firm's market power over the add-on is limited. The predictions of the model are confirmed by a hedonic price model on a dataset of cruises offered worldwide.

Drip Prices and Missed Sales

Renato Gomes (Toulouse School of Economics)
Jean Tirole (Toulouse School of Economics)

Firms often sell a basic good as well as ancillary ones. Hold-up concerns have led to ancillary good regulations such as transparency and price caps. The hold-up narrative, however, runs counter to evidence in many retail settings where drip prices (charged for ancillary goods) are below cost (e.g. free shipping, or limited card surcharging in countries where the "no-surcharge rule" was lifted). We argue that the key to unifying these

conflicting narratives is that the seller may absorb partly or fully the ancillary good's cost so as not to miss sales on the basic good. A supplier with market power on the ancillary good market then takes advantage of cost absorption and jacks up its wholesale price. Hold-ups only occur when consumers are initially unaware of the drip price and shopping costs are high. The price of the basic good then acts as a signal of the drip price, since a high markup on the basic good makes the firm more wary of missed sales. Regardless of whether consumers are informed, uninformed-but-rational, or naïve, regulation that imposes price transparency (preventing hold-ups) together with a ban on loss-making sales on the ancillary good (preventing give-aways) leads to (i) efficient consumption of the ancillary good, and (ii) a reduction on its wholesale price, generating strict welfare gains.

How to Induce Universal Access to a Social Interest Good with Private Management when Location Matters

Javier Elizalde (Universidad de Navarra)
Amaya Erro (Universidad Pública de Navarra)
Diego Ruiz-Hernández (CUNEF)

Some social interest goods, such as health services, may be run by private firms but the public authority wants to guarantee universal access for all its citizens, often enforcing rules to incentivise provision and adequate prices. As in many cases (like hospitals) the location of facilities matters we use a simple model of spatial monopoly with geographic concentration of demand, analysing the effect on the level of coverage and welfare of two public policies: regulation of the location of facilities and allowance for price discrimination across consumers (patients) regarding the commuting distance. Our theoretical results predict that, with price discrimination, universal access takes place more often and the provider of the service, who extracts the whole consumer surplus, tends to open the facilities in the most populated town of the region. Instead, with a universal price, the service is run in neutral locations more often. Only when the willingness to pay for the service is in the highest threshold there may be some consumer surplus and this only happens when the government dictates the place where the service is run.

Cost and Quality Regulation of a Monopolist

Marten Ovaere (KU Leuven)

This paper studies a linear cost and quality regulation of monopolies confronted with fairly inelastic demand. The model differs from the earlier literature on quality regulation by focusing on the monopolist's cost function instead of the demand curve. This allows to analyze the effect of regulation on quality and cost-reducing effort instead of quality and quantity. The analysis shows that both quality and effort increase with the power of the quality incentive. The effect of the power of the cost incentive is ambiguous but under reasonable assumptions it increases effort and decreases quality. Next, introducing uncertainty, the power of the cost incentive and quality incentive should optimally be equal and below one. Last, we compare our hybrid regulation to pure rate-of-return and price-cap regulation and analyze case studies in electricity, gas and water.

Regulating Cancellation Rights with Consumer Experimentation

Florian Hoffmann (University of Bonn)
Roman Inderst (Goethe University Frankfurt)
Sergey Turlo (Goethe University Frankfurt)

Embedding consumer learning about a product or service into a market environment, we find that equilibrium contracts induce too little returns or cancellations. Bilaterally efficient contracts neglect a pecuniary externality on other firms in the market. While it is always socially optimal to impose a binding statutory minimum for the refund level, imposing a binding minimum cancellation period is only beneficial when competition is weak, but it backfires otherwise. These clear-cut results are obtained by expressing consumer learning through a rotation of the distribution of consumers' posterior valuation, which we show to hold for commonly used learning technologies.

Do Immigrants Return Knowledge Home? The Evidence on Knowledge Dissemination via Wikipedia

Olga Slivko (ZEW Mannheim (Centre for European Economic Research))

While previous studies highlight the positive impact of immigration on cross-border patenting and scientific publications, the role of immigration flows in the dissemination of knowledge in a wider context is not fully assessed. In this paper, I estimate the effect of immigration on the facilitation of online knowledge in relevant domains. To quantify online knowledge, I focus on one of the world's most viewed knowledge platforms, Wikipedia. I combine the data on (skilled) immigration flows between the pairs of countries of immigrants' origin and destination with contributions to Wikipedia about destination countries in the native languages of origin countries. The knowledge domains I look at are related to science, technology and culture. In order to draw a causal inference, I use spikes in immigration above 30% in the origin countries as exogenous shocks with respect to Wikipedia content and analyze subsequent changes in the rates of contribution to Wikipedia in a difference-in-differences framework. The results suggest that an increase in immigration yields more knowledge contributed to Wikipedia about destination countries on the native languages of the origin countries. The increase in contributions stems mostly from anonymous (potentially, new or occasional) contributors. Moreover, once spikes in skilled immigration are considered, the effects on science and technology domains get stronger.

What determines international and inter-sectoral knowledge flows? The impact of absorptive capacity, technological distance and spillovers

Florian Seliger (ETH Zurich)

This paper studies determinants of knowledge flows as measured with patent forward citations that occur between 'input' and 'output sector-countries'. We look at the impact of absorptive capacity of a focal sector-country, knowledge spillovers and technological distance between sector-countries on further knowledge flows. For this purpose, we develop a knowledge flow matrix similar to input-output tables in trade where patent citations capture knowledge flows that go from the input sector-country to the output sector-country. We estimate a gravity model with variables that capture technological distance and knowledge that comes from either inside the input output pair or from external spillover sources. Our results indicate that knowledge accumulated in the output sector-country and – in some cases – external spillovers are key in generating further knowledge flows that go to the output sector-country. A distinction between high-tech and low-tech sector-countries shows that spillovers are more useful for the generation of knowledge flows if the input sector-country is low-tech. Low-tech sector-countries benefit from both high-tech knowledge from the output sector-country and external knowledge from the technological frontier. In contrast, knowledge flows based on high-tech sector-countries cannot benefit from low-tech sector-countries and only to a very limited extent from other high-tech sources. Technological distance between sector-countries has a negative impact on further knowledge flows so that only technologically proximate sector-countries are more likely to generate knowledge flows.

International Mobility of Inventors and Innovation: Empirical Evidence from the Collapse of the Soviet Union

Gabriele Pellegrino (EPFL)

This paper assesses the extent to which the international migration of inventors affects the level of innovation of the receiving country. To this aim we make use of a new database, mapping migratory patterns of inventors, and we draw on the end of Soviet Union and the consequent post-1992 influx of ex-Soviet inventors in the United States. Econometric analysis on a panel of U.S. cities and technological fields shows that propensity to patent by local inventors increases significantly after the arrival of ex-Soviet Union inventors. Interestingly, estimations reveal technological fields specific effects. The positive impact of migrant inventors appears to be particularly relevant in physics and chemistry.

Licensing and Innovation with Imperfect Contract Enforcement

Eirik Kristiansen (NHH)
Richard Gilbert (University of California-Berkeley)

Licensing promotes technology transfer and innovation, but enforcement of licensing contracts is often imperfect. We model contract enforcement as a game with perfect information but probabilistic enforcement and explore the implications of weak enforcement on the design of licensing contracts, the conduct of firms and market performance. An upstream firm develops a technology that it can license to downstream firms using a fixed fee and a per-unit royalty. Strictly positive per-unit royalties maximize the licensor's profit if competition among licensees limits joint profits. With imperfect enforcement, the licensor lowers variable royalties to reduce cheating. Although imperfect contract enforcement reduces the profits of the licensor, weak enforcement lowers prices, increases downstream innovation, and in some circumstances can increase total economic welfare.

Patent Protection and R&D Subsidy Under Asymmetric Information

Haejun Jeon (Osaka University)

We examine a license contract in vertically separated market in which an upstream firm develops new technology that can save a downstream firm's running costs. We show that perfect patent protection is optimal under symmetric information, whereas it is not if the licensee cannot identify the technology's quality and the licensor's R&D cost efficiency. Furthermore, it is shown that social welfare under asymmetric information is higher than that under symmetric information for most patent protection level, yet the latter dominates the former in the presence of optimal policy for each regime. R&D subsidy is found suboptimal under symmetric information, whereas it can be optimal in the presence of information asymmetry. With these features, we derive a combination of patent protection and R&D subsidy that yields the first-best results in multiple industries at the same time. In spite of the suboptimality, R&D subsidy can stimulate the innovation of more efficient firms under symmetric information at the expenses of losses in social welfare, while that of less efficient ones is rather delayed. Under asymmetric information, however, it neither stimulates nor stifles innovation unless too much is granted. It is shown that information asymmetry induces underinvestment of less efficient firms and overinvestment of more efficient ones, especially in the presence of R&D subsidy.

Prizes versus Contracts as Incentives for Innovation

Yeon-Koo Che (Columbia University)
Elisabetta Iossa (University of Rome Tor Vergata)
Patrick Rey (Toulouse School of Economics)

Procuring an innovation involves motivating a research effort to generate a new idea and then implementing that idea efficiently. If research efforts are unverifiable and implementation costs are private information, a trade-off arises between the two objectives. The optimal mechanism resolves the tradeoff via two instruments: a monetary prize and a contract to implement the project. The optimal mechanism favors the innovator in contract allocation when the value of innovation is above a certain threshold, and handicaps the innovator otherwise. A monetary prize is employed as an additional incentive but only when the value of innovation is sufficiently high.

Parallel sessions / Saturday 2 September 2017 / 09:00 – 10:30

Litigation, Settlement, and the Role of Legal Precedent: An Application to Antitrust Commitments

Andreea Cosnita-Langlais (University Paris Nanterre)
J-P Tropeano (Universite de Paris 1-Paris School of Economics)

This paper contributes to the emerging theoretical literature on the impact of commitments or settlements on the efficiency and effectiveness of antitrust enforcement, by focusing on the role of legal precedents. We discuss the optimal use of commitments in antitrust, while allowing for key effects that have not been previously combined in the same model: the deterrence of the primary behavior by the different instruments used by the policy-maker (commitments or prohibitions), the ensuing welfare trade-off, and the dynamic perspective through the focus on legal precedents.

Competition Policy in Regulated Markets

Jacob Seifert (University of Manchester)

This paper studies the enforcement of competition policy in regulated markets. These are markets in which firms, besides taking some anti-competitive action, may take a second action that is subject to separate regulation. We develop a general welfare-based framework, which incorporates both deterrence and enforcement effects. We show that welfare may be negative in the first-best, and that taking secondary actions into account can strengthen the case for per se legality standards in competition policy. We also derive the conditions under which the competition authority may legitimately ignore the secondary action and demonstrate that, when these conditions are not met, such a “simplistic” approach to competition policy leads to distortions in decision errors and deterrence. Finally, we apply the framework to a more detailed study of innovative industries, the banking sector, and regulated network industries.

A simple way to identify the degree of collusion under proportional reduction

Naoki Wakamori (University of Tokyo)

Proportional reduction is a common cartel practice, in which cartel members reduce their output proportionately. We develop a simple method to quantify this reduction relative to a benchmark market equilibrium scenario and relate the reduction to the traditional conduct parameter. Our measure is continuous, allowing us to have a simple interpretation as the “degree of collusion” and nesting the earlier models in the existing literature. Furthermore, our methodology addresses Corts (1999) critique by estimating time-varying degree of collusion from a short panel of firm-level observations, exploiting firms ex post heterogeneity. We illustrate the method in Monte-Carlo simulations and in application to the data from the Joint Executive Committee railroad cartel.

Contract Design with Limited Commitment

Vitali Gretschko (ZEW; University of Mannheim)
Achim Wambach (University of Cologne)

We consider the problem of a principal who wishes to contract with a privately informed agent and is not able to commit to not renegotiating any outcome of any mechanism. That is, we allow the principal, after observing the outcome of a mechanism to renegotiate the outcome without cost by proposing a new mechanism any number of times. This implies that for any outcome of a mechanism to be implementable it must be robust against renegotiation to outcomes that are themselves robust against renegotiation to outcomes that are themselves robust against ... We provide a general characterization of renegotiation-proof outcomes. The proposed solution dispenses with the details of the particular mechanism selection strategy and provides an effective and easy-to-use tool to analyze contracting problems with limited commitment. We apply the solution to a setting with a continuous type space, private values and non-linear contracts. We find that the optimal renegotiation-proof outcomes for the principal are pooling outcomes and satisfy a “no-distortion-at-the-bottom” property.

Mechanism Design without Commitment – Solution and Application to Bilateral Bargaining

Hannu Vartiainen (University of Helsinki, HECER)

This paper identifies mechanisms that are implementable even when the planner cannot commit to the rules of the mechanism. The standard approach is to require mechanism to be robust against redesign, which often leads to existence problems. The novelty of this paper to require robustness against redesigns that are themselves robust against redesigns that are themselves robust against … That is, we allow the planner to costlessly redesign the mechanism any number of times, and identify redesign strategies that are both optimal and dynamically consistent. A mechanism design strategy that credibly implements a direct mechanism after all histories is shown to exist. The framework is applied to bilateral bargaining situations. We demonstrate that a welfare maximizing second best mechanism can be implemented even without commitment.

Strategic Shirking in Bilateral Trade

Christoph Luelfesmann (Simon Fraser University)

The paper investigates a bilateral trade relationship where the seller can undertake specific investments before the trade transaction takes place. In this canonical setting, I identify a novel reason for hold up and contractual inefficiency. The investing party may shirk for strategic reasons, namely, exert an effort so low that trade becomes inefficient and does not occur in equilibrium. Under a fixed-price contract (the second-best mechanism in the standard setting where trade is efficient regardless of the seller’s investment), strategic shirking can arise for any precontracted price. Moreover, if strategic shirking arises under a fixed-price contract, no general revelation mechanism exists which restores efficient trade. The shirking problem becomes more severe when the agents trade after value and costs of trade are known, relative to a situation where the agents trade before this information has become available. Finally, I establish that when the buyer can also undertake specific investments, shirking and non-shirking equilibria may coexist.

Distorted Advice in the Mortgage Market: Theory and Structural Estimation

Leonardo Gambacorta (BanK for International Settlements)
Luigi Guiso (Einaudi Institute for Economics and Finance)
Paolo Emilio Mistrulli (Bank of Italy)
Andrea Pozzi (Einaudi Institute for Economics and Finance)

Anton Tsoy (EIEF)

Complex financial decisions require sophistication which not all households possess. This exposes them to the risk of being exploited when seeking advice from intermediares. We set up a structural model of financial advice and estimate it using administrative data on the universe of Italian mortgages. In the model banks have an ideal mix of fixed and adjustable rate mortgages and achieve it by both setting rates and providing advice to their clientele. “Sophisticated” households know which mortgage is best for them; “naive” households are instead susceptible to advice and will take the type of mortgage recommended by the bank. We recover the primitives of the model and use them to quantify the welfare implications of biased financial advice. The cost of the bias is equivalent to increasing the annual mortgage payment by 1,183 euros. Losses are bigger for the naive but also the sophisticated lose. Because even distorted advice conveys information, banning it altogether would result in a loss of 738 euros per year on average, mostly paid by the naive consumers. A financial education campaign is beneficial for all, though in different degrees.

Bank Competition and the Limits of Creditor’s Protection Reforms

Leonardo Alencar (Central Bank of Brazil)
Rodrigo Andrade (Central Bank of Brazil)
Klenio Barbosa (Sao Paulo School of Economics – FGV)

This paper empirically investigates how the lack of competition in the credit market can hamper the effects of an increase in creditor protection on the interest rate and the spread of loans in the Brazilian credit market. Banking oligopoly pricing theory suggests that the effects of an increase in creditor protections may be limited or absent on interest rates in credit markets which lack competition. Brazil is a perfect testing ground to study the effect of an increase in the creditor protection because in early 2005 a new bankruptcy law was approved by the Brazilian Congress. That new legislation improved corporate creditor protection and the bankruptcy system’s efficiency. Using monthly data provided by the Central Bank of Brazil, which contains information on bank interest rates for corporate and consumer loans, volume of credit, market power indicators, and other important covariates, we find that the lack of competition hampers 27.5% of the potential reducing effect of the law in the interest rate of new corporate credit operations. If we consider the average market power over all credit lines (treated and control group), then the liming effect represents 295 basis points, or 40.1%. Our results show that an institutional reform in that increases creditors protection has a positive effect on credit condition for firms, but the competition structure of the market matters.

The Geographic Flow of Bank Funding: Branch Networks and Local-Market Competition

Victor Aguirregabiria (University of Toronto)
Robert Clark (Queen’s University)

The integration of deposit and loan markets may be constrained by the geographic dispersion of depositors, borrowers, and banks. Asymmetric information between geographic locations, monitoring costs, transaction costs, and imperfections in interbank wholesale markets can all serve as frictions to the flow of funds across markets. Banks’ branch networks can reduce some of these frictions and increase the flow of funding to geographic locations where credit is in greater demand. However, local market power and economies of scope between deposits and loans at the local level may have a negative impact on the geographic flow of credit. This paper studies empirically the contribution of branch networks, local market power, and economies of scope to this flow. Our results are based on the estimation of a structural model of bank oligopoly competition for deposits and loans in multiple geographic markets using data at the bank-county-year level from the US

banking industry for the period 1998-2010. The identification of the model exploits the independence of transitory local shocks between geographic locations which are distant enough from each other. The estimated model shows that a bank's total deposits has a very significant effect on the bank's market shares in loan markets. We also find evidence that is consistent with significant economies of scope between deposits and loans at the local level. Counterfactual experiments show that these economies of scope generate a substantial home-bias in the utilization of funds. Local market power has also a significant negative effect on the geographic flow of credit.

Market Evolution, Bidding Strategies, and Survival of Art Dealers

Marina Gertsberg (Maastricht University)

We show the value of expertise during the evolution of a market characterized by asymmetric information. Using a unique historical data set, we show how market dynamics encourage entrants. Our results provide evidence that better informed dealers pay about 24% more for an artwork of the same quality than less informed dealers. Additionally, our results indicate that informed dealers are more likely to survive in the market. Our evidence supports the conjecture that, in common value auctions, when information asymmetries are present, dealers with better information benefit. These results have important implications for maintaining and sustaining competitive advantage.

The ultimate corporate objective is survival

Philipp Mundt (University of Bamberg)

The question about the determinants of firm profitability occupies research in industrial organization, strategic management, accounting and finance, and related fields. In one way or another, existing contributions suggest that either industrial or firm-level determinants of firm performance do exist. In this paper, I show that the effect of firm idiosyncrasies on the dynamics of profitability becomes almost negligible when companies survive in the market for a sufficiently long time period. Conditional on survival, the time evolution of the profit rate is governed by a common dynamic law for all firms. This has unexpected consequences for our understanding of corporate strategy because survival rather than profitability becomes the ultimate business objective.

A Compositional Data Analysis of Market Share Dynamics

Yoshiyuki Arata (The Research Institute of Economy, Trade and Industry)
Tamotsu Onozaki (Rissho University)

Market share is an important variable for understanding how competition works. However, we cannot use the conventional multivariate statistics because shares are subject to the constraint that their sum is 1, which yields misleading results. To overcome this problem, this paper applies compositional data analysis to market share data on Japanese manufacturing firms. First, we find that, in several industries, firms face a more intense struggle for market share despite high concentration. Second, market competition is characterized by competition between the subgroup of the top 2 or 3 firms and lower-ranked firms rather than competition between the top 2 firms.

Information exchange in retail markets with uncertainty about downstream costs

Daniel Herold

This paper analyzes the influence of an information exchange between suppliers in retail markets. A retailer with private information on his costs bargains sequentially with two producers about a two-part tariff. If an information exchange occurs fixed fees will increase. Therefore, the retailer is worse off in expectation. Moreover, as an agreement is less likely to be found, also final consumers may be harmed. This especially holds when retail costs are high.

Asymmetric Information and Reputation Building in an Investment Game

Moritz Janas (University of Konstanz)
Emilia Oljemark (U Konstanz)

We analyze a finitely repeated trust game in which an Investor chooses in each period whether to invest in a project carried out by an Entrepreneur. The Investor learns about the reliability of the Entrepreneur by observing whether investments are repaid. If the project is valuable enough, an unreliable Entrepreneur has reputational concerns. We show that ex-ante frequencies of investments and repayments are higher if the Entrepreneur is privately informed about the value of his project. Theoretical predictions are tested in a laboratory experiment. Although results from the experiment are mixed, our data points to further research questions to potentially close the gap between theory and observed behavior.

Convincing early adopters: Price signals and information transmission

Nicolas Figueroa (Pontificia Universidad Catolica de Chile)
Carla Guadalupi (Universidad de las Islas Baleares)

We study the optimal pricing strategy for a new product when consumers learn from purchase decisions of early adopters. We consider a dynamic monopoly model, in which a long-lived monopolist faces a potential buyer each period. The monopolist is better informed about his type (either high or low), and a high-type seller is more likely to produce high-quality products. First-period consumers are expert early-adopters, perfectly informed about product quality. Second-period consumers, on the other hand, learn about product quality through the observation of public history, namely past price and purchase decision. In this context, prices play a dual role: they are both signals and a vehicle for information transmission. The main result is that the optimal signaling strategy depends on first-period demand function and second-period beliefs. In particular, both high and low introductory prices can optimally signal high quality. When the expert consumer is less sensitive to price for high-quality products, high prices are less costly for high-type firms. Moreover, sales at higher prices carry good news to later adopters. When the expert demand function is sufficiently elastic, high prices are too costly for the high-type monopolist, who will prefer to introduce his product at lower prices. An additional implication: for the high-quality seller, the expected price is decreasing (increasing) over time; whereas the opposite is true for the low-quality one. Since the second-period price is a function of beliefs, it will be lower (higher) if good news is revealed upon first-period product introduction. Given a specific utility function and preference distribution for the expert consumer, we finally provide two examples in which high and low prices, respectively, signal high quality, depending on demand function characteristics.

Online media: When promoting competitors softens competition

Xavier Lambin (Toulouse Shool of Economics – ENGIE)

Two-sided markets with multi-homing typically exhibit features of "competitive bottlenecks" whereby platforms compete hard for single-homers while exploiting the multi-homing side. This paper shows that mutual diversion of the single-homing side to competitors can alleviate this bottleneck effect, thereby increasing platform profits. In the online newspaper business these transfers can take the form of mutual promotion of competitors' content in one's own articles. In this way, readers of a given newspaper can be partially reached by the advertisement displayed in competing newspapers. On the one hand, this inter-newspaper promotion increases the diversity of content made available to readers. On the other hand and perhaps counter-intuitively, it may soften competition for readers, leading to a decrease in content quality. This may harm readers welfare in the long-run, especially if promotion fees are low. A large original data set of promoted contents collected on French online newspapers, allows to describe what type of articles are promoted.

Tax-free digital news?

Tim Wyndham (NHH Norwegian School of Economics)

News platforms are struggling. Their printed readership is predominantly old, and their digital product struggles to win the attention of the young. For several decades tax reductions have been used in Europe to stimulate the circulation of printed newspapers. Would extending these reductions to digital platforms stimulate digital consumption? Using a two-sided pricing model where a print platform and a digital platform compete for consumers and advertisers we show that the answer is no. The two-sidedness of the market means that the digital price would increase. Not only would digital circulation decrease but so too would the fraction of consumers that access news from both platforms. Key media policy goals of reach (circulation) and pluralism (multi-homing) would be harmed.

Content Acquisition by Streaming Platforms: Premium vs Freemium

Elias Carroni (University of Bologna)
Dimitri Paolini (Università di Sassari)

We analyze the optimal decision of a monopolistic streaming platform. The platform obtains contents from copyright owners (artists) who are paid with a per-user royalty. Advertisers pay a per- user fee to display their commercials. Users value the variety of contents and are heterogeneously bothered by ads. We show that when commercials generate an intermediate nuisance and the size of the potential market is large, the platform finds it optimal to offer only a paying subscription without displaying any ads. In contrast, a small potential market results in the offer of a menu of subscriptions, with ad-intolerant users paying a positive price and moderately-averse users opting for a free-of-charge solution. The second (first) solution is always preferred when commercials generate a strong (weak) nuisance. We also show that there may emerge a misalignment of the platform's and artists' interests.

Mergers in a Model with Complementarity

Daniel Ershov (University of Toronto)
Scott Orr (University of Toronto)

Jean-William P. Laliberté (University of Toronto)

Standard discrete choice models used to evaluate mergers assume that different product varieties are substitutes. However, legal defences in some recent high-profile mergers rested on demand complementarity (e.g., GE/Honeywell). Since complements tend to be priced lower by a monopolist than by a duopoly, standard models will overstate consumer harm in these mergers. We use consumer level data from AC Nielsen look at two products with natural demand complementarities and a history of mergers and regulatory activity – potato chips and carbonated soda (pop). We set up and estimate a discrete choice model that allows for demand complementarity and simulate a merger in this market between the pop and chip producer PepsiCo/Frito-Lay and the pop producer Dr. Pepper. Our model predicts that once demand complementarity between chips and pop is taken into account, this merger will reduce chip and pop prices by approximately 1%. By contrast, the standard discrete choice model predicts that pop prices would increase by 2% following the merger.

The Effect of Retail Mergers on Prices and Variety: An Ex-post Evaluation

Elena Argentesi (University of Bologna)
Paolo Buccirossi (Lear)
Roberto Cervone (Lear)
Tomaso Duso (DIW-Berlin)
Alessia Marrazzo (Lear and University of Bologna)

Unlike most retrospective merger studies that only focus on price effects, we also estimate the impact of a merger on product variety. We use an original dataset on Dutch supermarkets to assess the effect of a merger that was conditionally approved by the Dutch Competition Authority (ACM) on prices and the depth of assortment. We find that the merger did not affect prices but it led the merging parties to decrease the depth of their assortment, thereby reducing consumer choice. This effect is mainly driven by a reduction in variety for stores that were not re-branded after the merger, suggesting that the merging firms reposition their product offerings in order to avoid cannibalization. We also find that the reduction in variety for the merging parties is partially compensated by competitors increasing variety, except in very concentrated markets where all firms decrease variety. The issuance of divestitures partially outweighed the negative effect of the merger. Yet, it appears that additional divestitures would have been necessary to remove completely the adverse effect of the merger on the depth of assortment.

M&As, Investment and Financing Constraints

Nicole Wößner (Heinrich Heine University Düsseldorf)

We use a panel data set of European firms to analyze the effects of domestic and international M&As on target firms' investment and financial constraints. Combining propensity score matching with a difference-in-differences estimator, our results show that upon acquisition, target firms obtain better access to external finance, are characterized by higher levels of tangible and intangible assets, and display lower dependence of investments and cash savings to the availability of internal funds. We also provide evidence that some of our estimated effects are concentrated among acquisitions during the 2007-2009 financial crisis, relatively small target firms, and domestic acquisitions within Western European countries.

Strategic Interaction in Pharmaceutical Price Regulation and Innovation

Paolo Pertile (University of Verona)
Martin Forster (University of York)
Simona Gamba (University of Verona)

We present a model of the strategic interaction among authorities regulating pharmaceutical prices in different countries, and the resulting global investment decisions of pharmaceutical firms. Regulators' decisions affect consumer surplus directly via prices and indirectly through the effect of price changes on firms' profits and hence R&D investment decisions, which in turn affect patient health. The positive externality of a price increase in one country provides an incentive for other countries to free-ride. We study how relevant characteristics at the country level can affect optimal decisions by regulators. Other things being equal, and for a given level of prices in the other countries, the optimal price tends to be higher the larger is the size of the population needing treatment in a country and the lower is the out-of-pocket payment. We aim to complete the paper with an empirical test of the predictions of the theoretical model.

Specifications in demand systems for drugs: logits v. aids

Farasat Bokhari (University of East Anglia)
Franco Mariuzzo (University of East Anglia)

We uses ADHD drugs sales data from the US and compare elasticities and merger simulation results from three different demand models. These include logit, random coefficients logit, and AIDS with multistage budgeting. Compared to the discrete choice models, magnitude of cross-price elasticities is large for the third model, and some of the cross terms are negative. Merger simulations also show much larger price effects for the third model compared to the discrete choice models. When complementarities are present, multistage AIDS model may be a better policy tool for merger evaluation than the popular discrete choice models.

Experts and Financial Ties: Evidence from FDA Advisory Committees

Fanny Camara (University of Southern California)
Margaret Kyle (MINES ParisTech)

The use of expert committees is common in many settings. A key concern is the potential for conflict of interest, particularly for members of committees that oversee regulated firms. However, ties to industry may be correlated with relevant expertise. We examine the voting behavior of members of the Food & Drug Administration's Advisory Committees (ACs), which make recommendations on new drug applications and other regulatory questions. Our work exploits a novel dataset that includes detailed information on each AC member, including their academic degrees, age, areas of expertise, and scientific contributions. We construct a measure of financial ties to industry using information disclosed in scientific publications authored by AC members, as well as those reported directly to the FDA and by the industry under the Sunshine Act. Advisors with industry ties generally have higher observable quality: they publish more, receive more NIH grants, etc. We estimate a structural model of voting that allows us to recover each member's skill and bias associated with financial ties to a drug's sponsor or its competitors. Our preliminary results indicate that financial ties to industry are associated with both an increased probability of voting in favor of a drug as well as higher skill.

The Balance of Power in Markets with Competitive and Direct Sales Channels

David Ronayne (University of Oxford)

Greg Taylor (University of Oxford)

We model the strategic interactions between firms and price comparison websites (PCWs). Equilibrium falls into one of two regimes: either the PCW charges high commission and faces competition from firms' direct sales channel, or it charges low commission and accommodates them. Seemingly pro-competitive developments can have a non-monotonic effect on prices. Specifically, increasing the number of prices consumers check can increase prices and decrease total consumer surplus. We then endogenise the market structure, allowing firms and PCWs to fight for consumer attention via a technology which can be interpreted as more traditional advertising outlets or as search-engine marketing. We show how marketing reinforces the fee regime, and can further lower consumer welfare.

Shopping Malls, Platforms and Consumer Search

Alexei Parakhonyak (University of Oxford)
Maria Titova (UCSD)

We consider a general model of a market for differentiated goods, in which firms are located in marketplaces: shopping malls or platforms. There are search frictions between the marketplaces, but not within them. Marketplaces differ in their size. We show that consumers prefer to start their search from the largest marketplace and continue in the descending order of their size. We show that the descending search order is the only search order which can be a part of an equilibrium for any market configuration. Despite charging lower prices, firms at larger marketplaces earn higher profits, and under free entry all firms cluster at one place. If a marketplace determines the price of entry, the equilibrium marketplace size depends negatively on search costs.

Multiproduct Intermediaries

Andrew Rhodes (Toulouse School of Economics)
Makoto Watanabe (VU University Amsterdam)
Jidong Zhou (Yale University)

This paper offers a framework for studying the optimal product range choice of a multiproduct intermediary, in an environment where consumers demand multiple products and face search frictions. We first demonstrate that the intermediary earns positive profit even if it is no more efficient than small firms at selling products. We then characterize its optimal stocking policy. The intermediary uses exclusively stocked high-value products as loss leaders to increase store traffic, and at the same time earns profit from non-exclusively stocked products which are relatively cheap to buy from manufacturers. We also show that relative to the social optimum, the intermediary tends to be too big and stock too many products exclusively.

Shared Ethical Concerns

Nicolas Bonneton (Toulouse School of Economics)

This paper presents a theory of market interactions between motivated agents. We consider that both consumers and producers take into account their own intrinsic motivation and social prestige. We study a model in which producers have the possibility to certify through a label that what they produce satisfies at least a given ethical standard. In such economy, the social planner has to arbitrate between an externality issue

(subsidy) and a signaling issue (taxing). We find a new mechanism showing that financially rewarding ethical behavior is unproductive. In particular, we show that subsidizing ethical labels or making its requirement compulsory have important welfare drawbacks. Additionally, when there is a severe multitasking situation or when the externality is small, it is optimal to tax the producers of the ethically labeled good. Generalizing our model to a multitasking framework, we question the signaling role of an ethical label. We show that the label is often an imperfect screening device: ethical producers do not necessarily choose to obtain the ethical label while some profit-seeking producers do. The assumptions and mechanisms of the model are illustrated with examples from the organic industry.

Logit, CES, and Rational Inattention

Andrei Matveenko (CERGE-EI)

We study fundamental links between two popular approaches to consumer choice: the multinomial logit model of individual discrete choice and the CES utility function which describes a multiple choice of a representative consumer. We base our analysis on the rational inattention (RI) model and show that the demand system of RI agents each of which chooses a single option, coincides with the demand system of a fictitious representative agent with CES utility function. Thus, the multiple choice of the representative agent may be explained by the heterogeneity in signals received by the RI agents. We obtain a new interpretation for the elasticity of substitution and the weighting coefficients of the CES utility function. Namely we provide a correspondence between parameters of the CES utility function, prior knowledge and marginal cost of information.

Strategic Obfuscation and Retail Pricing

Gordon Klein (University Muenster)

Retailers often stock items that are only slightly differentiated from others' – different sizes of a popular brand, or different flavors in a common product line for instance. We argue that this practice is a form of strategic obfuscation, intended to raise consumer search costs, and margins on non-comparable products. We test our hypothesis using examples from several product categories in German and French retail scanner data. We find that, after controlling for other explanations for how margins can vary with package size, we cannot rule out strategic obfuscation as a feature of our retail sales data.

Has increasing regulatory activity reduced regulatory offending? A capture-recapture assessment of UK financial regulation

John Ashton (Bangor University)
Tim Burnett (Bangor Business School)
Ivan Diaz-Rainey (University of Otago)
Peter Ormosi (University of East Anglia)

Has increasing regulatory activity reduced the offending by financial firms? This study examines this question through considering both firms which have been caught for offenses and through estimating the population of firms offending and yet to be caught. Using a Cormack-Jolly-Seber Capture-Recapture method the proportion of all firms offending in the UK financial system are estimated. The analysis is based on regulatory notices and matched with firm information derived from the Financial Services Register for the period 2002-15. Preliminary results support the view that the effectiveness of the regulatory detection of financial misconduct varied over

the period 2003 to 2016 with evidence to support the view that this resulted from exogenous changes in the regulatory environment, specifically the change of mandate of the regulator in 2013.

The Impact of Maximum Markup Regulation on Prices

Christos Genakos (Cambridge Judge Business School)

Markup regulation is a common yet understudied type of regulation. We analyze the repeal of maximum wholesale and retail markup regulation in an oligopolistic and vertically nonintegrated market. By comparing the prices of products affected by regulation before and after the policy change and using unregulated products as a control group, we find that abolishing regulation led to a significant decrease in both retail and wholesale prices. Our analysis provides indirect but consistent evidence that markup ceilings provided a focal point for collusion among wholesalers.

Should we Intervene in the Demand of Firms in the Software Market?

Clemens Fiedler (Tilburg University)

In this paper, we study how a research and development cost structure that scales imperfectly with the number of customers impacts the strategic decisions of firms. It can explain why some markets encourage a small firm to behave submissively while it acts aggressively on other markets. Two firms compete in R&D efforts. Efforts attract customers from the competitor and increase the revenue per customer. The cost of efforts depends partially on the number of customers. We show how this cost structure can generate an inverse u-shaped reaction function of the firms' efforts. We derive conditions under which both firms can increase their efforts in response to an intervention supporting the market leader and under which such an intervention can only encourage the leader or only the laggard. The outcome hinges on whether a laggard becomes more or less competitive as they lose market share. Using three exemplary markets - for hardware, software, and platform technology – we illustrate the importance of this effect to regulators interested in stimulating innovation.

Delaying Product Innovation in Duopoly: A Strategic Dynamic Analysis with Non-stationary Regime Switching Strategies

Serhat Gezer (Bielefeld University)
Herbert Dawid (Bielefeld University)

We consider an economy where initially two firms are active on a homogeneous product market. One of the firms has an option to introduce a substitute product in addition to the existing product by incurring adoption costs. We numerically derive the optimal introduction time and the associated Markov-perfect equilibria for investment in capacities and find that depending on the initial capacities on the established market and the value of adoption costs, three scenarios are possible for the innovator, namely innovating immediately, delaying introduction and abstaining from product introduction. In case of delay, the innovator strategically reduces investment in capacities on the established market prior to product introduction in order to increase the marginal value of the new product when switching.

Subsidizing Innovation and Production

Gamal Atallah (University of Ottawa)

This paper studies the interaction between production subsidies and innovation subsidies. We develop a model which allows us to calculate the socially optimal subsidies (and how they vary with changes in the economic environment), and to understand how firms react to each type of subsidy. In a three-stage game, the government chooses production and innovation subsidies in the first stage to maximize welfare in the presence of a shadow cost of public funds; two firms invest in cost-reducing R&D in the second stage; and the two firms compete in quantities in the last stage. We find that production subsidies crowd out innovation, since they reduce the gain for firms from investing in R&D. On the other hand, providing a production subsidy reduces the cost of the innovation subsidy, and vice versa. The optimal production subsidy is U-shaped with spillovers, while the innovation subsidy is increasing in spillovers. The production subsidy is higher for very low spillovers, while the innovation subsidy is higher for moderate/high spillovers. In equilibrium, because of the innovation subsidy, R&D increases with spillovers, and so does welfare. Consumer surplus and profits, however, first decrease then increase with spillovers. Optimal subsidies increase with research costs and with the slope of inverse demand, and have an inverted-U shape with respect to initial costs and demand height. We also consider the case of a financially constrained government, as well as the case of a uniform subsidy to production and innovation costs.

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Collusion in a telecom market in which the entrant raises the price in return for a discount on interconnection charges by the incumbent

Il Nam (KDI School of Public Policy and Management)

In 2003, the incumbent dominant firm and the new entrant in the market for local calls of Korea made an unusual collusion agreement requiring the entrant to raise the price and the incumbent to hand over market shares or transfer money by giving discounts on interconnection charge payments. This paper analyzes a model of repeated duopoly in a homogeneous market characterized by consumer switching costs, asymmetry in the initial subscriber bases and in the cost functions of firms, and asymmetric regulation. It proves that such collusion is possible and explains the effects of asymmetric switching costs on collusion.

Collusion Along the Learning Curve: Theory and Evidence from the Semiconductor Industry

Danial Asmat (Dept of Justice)

This paper formulates a theory of collusion with learning-by-doing and multiproduct competition and tests it with data from an explicit cartel. The model shows that collusion is harder to sustain on a new product generation, where learning is high, than an old generation, where learning is low. Collusion on the old generation shifts demand toward the new generation, raising its output. Empirical analysis exploits variation between cartelization and competition in the DRAM market to identify counterfactual quantities and prices. Consistent with the model, cartel firms cut output of older generations by up to 60% and increased output of newer generations manifold.

The Fat-Cat Effect of Cartels

Martin Carree (Maastricht University)
Andrea Guenster (Zurich University of Applied Science)
Mathijs van Dijk (Rotterdam School of Management, Erasmus)

This paper examines how the formation and termination of cartels affect the performance and behavior of their member firms. We identify 252 publicly listed firms active in 66 European cartels between 1980 and 2007. We investigate both static effects (increased profitability) and changes in strategic firm behavior (R&D investment and acquisition rate). The results show that R&D investment is (increasingly) lower during the cartel period, while the rate of acquiring other firms in fact increases. Hence, next to allocative inefficiency, cartels may also give rise to dynamic inefficiencies in the form of less innovation efforts or increased concentration.

Long-term contracting with unequal discounting

Thomas Schacherer (Humboldt-University Berlin)

We study a dynamic principal-agent relationship where the agent is more impatient than the principal. We characterize the optimal contract if the first-order approach is applicable. We show that the generalized no

distortion at the top and vanishing distortion at the bottom principles do not hold anymore. Moreover, in the case where the first-order approach can be violated we show that always an IC-constraint of the persistent low type causes this failure. Finally, we propose a structure of the optimal contract if the first-order approach is not applicable.

Endogenous favouritism, status incentives and optimal efficiency

Swapnendu Banerjee (Jadavpur University)
Oindrila Dey (Jadavpur University)
Sougata Poddar (University of Redsland)

The paper identifies sufficient conditions under which it is beneficial for an ex-ante impartial principal to indulge in ex-post efficient favouritism in the presence of status incentives. Here, by favouritism we mean that out of the pool of two agents, the principal delegates one agent with the full decision right of implementing a project (which can be generated by either of the two agents) and the favourite is conferred with a status if the outcome is good. The non-favourite is not offered any status under any situations. Ex-post inefficient favouritism arises when the favoured agent implements her project irrespective of the quality of the non-favourite's project which implies that the favourite might implement her bad project even when the other agent proposes a good project. Under ex-post efficient favouritism the favourite always implements a good project (even if it is proposed by the non-favourite). Comparing these two types of favouritism we find that favouritism does not lead to loss of ex-post efficiency as efficient favouritism unambiguously overrules the inefficient one. This result goes in line with the finding of Belot and Ven (2011), who has shown through a field experiment among school students that favouritism does not lead to inefficiency. We then compare favouritism with the fair decision rule, where the principal provides equal decision rights to both the agents, and we find that under certain conditions implementing ex-post efficient favouritism emerges as an optimal decision choice for the principal. Thus, this study contributes to the literature which captures the positive view of favouritism to show that under certain situations the principal (and hence an organization) is better off indulging in favouritism in some form or the other. Also this paper contributes in establishing the fact that favouritism may not lead to inefficiency. Unlike Prendergast and Topel (1996), Prendergast (2002), Berger et al. (2011) we do not assume that the principal receives an additional benefit from indulging in favouritism. Rather similar to Kwon (2006) our study proceeds to show that favouritism can arise even if the principal is ex-ante impartial with the important distinction that when valuation of status is critically high or substantially low the principal would always indulge in ex-post efficient favouritism. Together with that we also find that for very high return or very low return of the firm efficient favouritism emerges endogenously and it dominates over fairness. Thus this paper is a first that relates the return of a firm to its internal mode of operation viz. favouritism or fairness. In addition to this, the paper characterizes optimal incentive schemes under different regimes, viz. efficient and inefficient favouritism and fairness. It also brings out the interplay of pecuniary and status incentives under these regimes. Thus this paper is a first in establishing a non-monotonic relation between status incentives and the return of a firm with its internal mode of operation viz. favouritism or fairness.

Optimal Contract for Experimentation and Production

Fahad Khalil (University of Washington)
Jacques Lawarree (University of Washington)
Alexander Rodivilov (University of Washington)

Before embarking on a project, a principal must often rely on an agent to learn about its profitability. These situations are conveniently modeled as two-armed bandit problems highlighting a trade-off between learning (experimentation) and production (exploitation). We derive the optimal contract for both experimentation and production when the agent has private information about his skill in experimentation. Private information in the experimentation stage can generate asymmetric information between the principal and agent about the expected profitability of the production stage. The degree of asymmetric information is endogenously determined by the length of the experimentation stage. An optimal contract uses the timing of payments, the length of experimentation, and the output to screen the agent. To induce revelation during the experimentation, the principal utilizes the stochastic structure of asymmetric learning by agents with different skills. Both upward and downward incentive constraints can be binding. The relative probabilities of success and failure between agents of different skills imply that rent to a highly-skilled agent should be paid after early success and rent to a less-skilled agent after late success. The optimal contract may also feature payments for failure, excessive experimentation, and over- or under-production in the production stage.

Are Women Better Directors in the Boards?

Aytac Erdemir (i.Norwegian University of Life Sciences ii.Norwegian Institute of Bioeconomy Research)
Olvar Bergland (Norwegian University of Life Sciences)
Helge Berglann (NIBIO)

Gender balance law was adopted in 2005 and went into effect in January 2006 with a two year deadline for compliance in Norway. It has compelled all public limited firms to ensure gender balance at their boards, otherwise face liquidation. While many public companies have made changes in their boards, a considerable number of them, have tried to circumvent the regulation by changing their organization form. The ones that complied with this new regulation have changed their board compositions by including more women. In this work, we investigate the implications of this restructuring. We examine how including more women directors affects the company fundamentals. We look at two distinct dimensions. First, we see impact of their monitoring role at the boards, and whether their inclusion correspond with any corporate finance policy changes or firm fundamentals. Second, we comparatively scrutinize what has become different for companies that have managed to bypass the gender balance legislation. We utilize a unique database we constructed from the Norwegian Administrative database, which comprises financial information of public and private firms, as well as board and top-level executive variables from 2002 to 2012. In terms of value, we find higher female share in the boards to be correlated with higher Tobin's Q values, even when we control for firm and year specific effects. Further empirical results show that women are instrumental in curbing the executive compensation, and in protecting shareholder interests by improving the payout to shareholders.

Utility Firm Performance with Heterogeneous Quality Preferences and Endogenous Ownership

Richard Meade (AUT University)

We develop a theoretical model in which a utility firm (e.g. a network monopoly) can be owned by either its customers, or by investors. Owners of either type select the firm's efficiency (i.e. production technology), service quality, and price. Ownership choice is made endogenously – based on the quality preference of the firm's potential customers – resulting in either investor ownership, customer ownership, or non-service. We show that customer ownership arises endogenously when customers' preference for quality falls below the threshold required for profitable entry by investors, but above that required for entry by customer-owners. This means that customer-owned utilities necessarily have customers with a lower preference for quality. They are therefore predicted to have lower efficiency, quality and price than investor-owned firms, and provide

lower welfare overall. We find support for these predictions using data from customer- and investor-owned Electricity Distribution Businesses (EDBs) in New Zealand, applying empirical specifications that address the endogeneity of quality and costs. Our findings indicate that whether utilities should be customer- or investor-owned cannot be determined based on simple performance comparisons. Account must also be taken of how differences in customers' quality preferences affect the viability of different ownership forms.

Comparing micro-evidence on rent sharing under efficient bargaining from three different approaches

Jacques Mairesse (ENSAE and Maastricht University)
Sabien Dobbelaere (Vrije Universiteit Amsterdam)

Empirical labor economists have resorted to estimating the responsiveness of workers' wages on firms' ability to pay to assess the extent to which employers share rents with their employees. This paper compares this labor economics approach with two other approaches that rely on standard micro production data only: the productivity approach for which estimates of the output elasticities of labor and materials and data on the respective revenue shares are needed and the accounting approach which boils down to directly computing the extent of rent sharing from firm accounting information. The existence of collective bargaining power under efficient bargaining is the underlying mechanism generating a positive wage-profit correlation common to the three approaches. Isolating this particular mechanism allows us to provide micro-evidence on rent sharing under efficient bargaining from orthogonal directions by exploiting different dimensions in our French matched employer-employee data. We find a median absolute extent of rent sharing under efficient bargaining of about 0.30 using either the productivity or the accounting approach. Only exploiting firm-level information brings this median rent-sharing parameter down to 0.16 using the labor economics approach. Controlling for unobserved worker ability further reduces the median absolute extent of rent sharing to 0.08.

How to Boost Revenues in First-Price Auctions? The Magic of Disclosing Only Winning Bids from Past Auctions

Philippe Jehiel (Paris School of Economics)
Peter Katuscak (RWTH Aachen)
Fabio Michelucci (CERGE-EI)

We present an experiment to evaluate revenue implications of two disclosure policies available to a long-run auctioneer: disclosure of all bids from past auctions and disclosure of winning bids only. Using a first-price auction with two bidders, we find that disclosing the winning bids leads to higher bids and revenues in the long run. We propose to explain this finding by allowing a share of bidders to be naive in that, when presented with historical winning bids, they mistakenly best-respond to that distribution, failing to realize that winning bids are not representative of all bids. We also develop a method to estimate the fraction of naive bidders in a between-subject design and to relate it to the degree of bidders' risk aversion. Our findings challenge the predictive power of the Bayesian Nash equilibrium based on full bidder rationality, and they underline the selection of historical price information as a key market design choice.

Spatial Competition with Demand Uncertainty: A Laboratory Experiment

Stephane Turolla (INRA)
Aurélie Bonein (University Rennes 1)

Motivated by recent research on product differentiation, we conduct laboratory experiments to study how (aggregate) demand uncertainty influences location choices and price competition in the original Hotelling (1929)'s model. We provide new predictions on the effect of risk attitudes on both decisions under demand uncertainty and confront them with the data. Our experimental results support the predictions that demand uncertainty acts as a differentiation force for risk-neutral and risk-loving subjects. By contrast, we do not verify that demand uncertainty leads risk-averse subjects to agglomerate. This is explained by important learning effects and heterogeneous behaviors within this risk profile. Finally, it appears that demand uncertainty makes competition in prices fiercer by forcing subjects to deviate from the collusive outcome and to set prices close to the non-cooperative equilibrium.

Supply Function Competition, Private Information, and Market Power: A Laboratory Study

Anna Bayona (ESADE Business School)
Jordi Brandts (Institute of Economic Analysis (CSIC))
Xavier Vives (IESE Business School)

In the context of supply function competition with private information, we test in the laboratory whether—as predicted in Bayesian equilibrium—costs that are positively correlated lead to steeper supply functions and less competitive outcomes than do uncorrelated costs. We find that the majority of subjects bid in accordance with the equilibrium prediction when the environment is simple (uncorrelated costs treatment) but fail to do so in a more complex environment (positively correlated costs treatment). Although we find no statistically significant differences between treatments in average behaviour and outcomes, there are significant differences in the distribution of supply functions. Our results are consistent with the presence of sophisticated agents that on average best respond to a large proportion of subjects who ignore the correlation among costs. Experimental welfare losses in both treatments are higher than the equilibrium prediction owing to a substantial degree of productive inefficiency.

I Don't Know

Matthew Backus (Columbia University)
Andrew Little (Cornell University)

What should we infer when an expert says "I don't know" — that the question is difficult or that the expert is unqualified? If the latter, unqualified (and qualified but uninformed) experts will be tempted to mask their uncertainty. We introduce a principal-expert model with heterogeneity in both the competence of experts and the difficulty of the questions they are asked. Our main results examine how different incentives and information structures affect the possibility of admitting uncertainty. When experts care only about appearing competent, admission of uncertainty requires that the decision-maker has some chance of learning both whether the expert was correct or not ("state validation") and whether the problem at hand was hard ("difficulty validation"). When experts also have a small preference for good decisions, state validation alone can never include the admission of uncertainty, while difficulty validation ensures that at least the competent but uninformed experts say "I don't know". The model matches anecdotal evidence about when admitting uncertainty is feasible and offers new perspectives on the management of experts.

Signaling versus Costly Information Acquisition

Helmut Bester (Free University Berlin)

Matthias Lang (Free University Berlin)
Jianpei Li (University of International Business and Economics)

Spence (1973) first proposed education as a signaling device in labor markets. Many papers have extended his results in various directions. In these models, firms can only infer workers' productivities from workers' education choices. In reality, firms additionally use sophisticated testing, assessment centers and other verifications to learn workers' productivities. We assume that this information acquisition is costly and characterize the trade-offs between signaling and information acquisition. For sufficiently small costs, there is a unique equilibrium. In equilibrium, there is both: signaling and information acquisition. With vanishing costs, the equilibrium becomes more and more informative.

Reputation Signals and Market Outcomes

Hugo A. Hopenhayn (University of California Los Angeles)
Maryam Saeedi (Carnegie Mellon University)

The importance of reputation signals in markets where product quality is imperfectly observed has been long emphasized. In particular, this is a key consideration for the overall performance of trading platforms and online markets that are becoming increasingly important mechanisms for trade. We consider here reputation signals as imperfect aggregators of trade histories that are correlated with firm quality. This is the case, for example, of quality badges given by some trading platforms that partition sellers into a small number (in many cases two) of groups. This paper considers the impact of such reputation mechanisms on market outcomes (e.g. prices and market shares), the impact of information quality and the question of design of optimal partitions. More specifically, we consider a market where suppliers (e.g. retailers in eBay) differ in terms of quality but where consumers observe (coarse) imperfect signals (that are imperfectly correlated with quality.) Such is the case, for example, of reputation signals in many online markets. Sellers are heterogeneous in terms of quality and face costly entry and supply decisions. Consumers differ in preference for quality and the value of outside options. We solve for the Competitive and Cournot equilibria for a given partition of quality signals, determining prices and market shares of different quality segments as well as total welfare. We then consider the impact of changes in reputation signals on prices and market shares and solve for the optimal information partition. We also examine the impact of improvements in information quality on prices and market shares of firms as a function of quality signals.

Post-merger price variation matters, so why do merger retrospectives ignore it?

Franco Mariuzzo (University of East Anglia)
Peter Ormosi (University of East Anglia)

The price-effect of past mergers has been extensively researched over the past two decades. The overwhelming majority of these studies estimate the over-time average price effect of the merger. Merger guidelines agree that mergers should be approved if market dynamics, such as entry, eliminate negative welfare effects. Estimating price averages ignores key information about the post-merger dynamics of prices and is unable to identify if post-merger prices eventually revert to pre-merger levels. We provide evidence from a set of Monte Carlo experiments to show how serious this problem might be. Firstly, potentially all the studies that concluded – estimating post-merger over-time averages – that the merger led to a price increase, could have been wrong, and in fact the merger price increase disappeared within a reasonable time. Similarly, up to half of the studies that concluded that the merger did not increase prices could have been wrong in their conclusion.

Merging In-Market vs. Cross-Border: The Impact of Merger Policy

Jean-Marc Zogheib (Telecom ParisTech)

In this paper, we study how merger policy affects the choice between merging in-market and cross-border. We build a model where a firm chooses between both types of mergers. While an in-market merger, if anti-competitive, can be rejected by the antitrust authority, a cross-border merger is subject to uncertainty on its ex-post profitability. We first study this tradeoff when after a non-profitable cross-border merger, exiting the foreign market by merger is not possible. In this case, a more lenient merger policy discourages to merge cross-border compared to in-market. However, when it is possible to exit by an in-market merger, a more lenient merger policy favors cross-border mergers by lowering exit barriers. Thus, there is a way whereby merger policy considers more effectively both incentives to merge in-market and cross-border. This analysis is relevant specially for network industries such that the telecommunications.

Should competition authorities care about conglomerate mergers?

Carolina Policarpo Garcia (Sao Paulo School of Economics - FGV/EESP)
Paulo Azevedo (Insper)

Mergers and acquisitions may change competition even when they do not affect market structure, a case known as conglomerate mergers. Competition authorities for a long time have adopted an ambiguous view towards conglomerate mergers, in particular those that are product or market extension mergers (i.e. acquisitions of local firm by a multiunit company that sells the same product in different geographic markets). In this paper, we explore a wave of acquisitions of Higher Education Institutions by educational groups in Brazil, which allow us to disentangle the effects of conglomerate mergers and of horizontal mergers on price, quantity and quality. Our findings show that multiunit organizations are able to increase some quality indicators, regardless if they resulted from conglomerate or horizontal mergers. As for the effect on price and quantity, results are different. For conglomerate mergers we estimated an increase in the number of freshmen, enrolled students and tuition, whereas for acquisitions that leads to horizontal concentration there is no increase in quantity, just in prices. On the whole, our findings are consistent with the hypothesis that multiunit operations increase efficiency, due to scale and scope economies, but that only conglomerate mergers tend to pass on those gains to consumers. We find, though, heterogeneous effects according to the educational group, which still give some leeway for competition authorities to care about conglomerate mergers.

Competition Makes Inspectors More Lenient: Evidence from the Motor Vehicle Inspection Market

Osmis Habte (U Lund)
Håkan Holm (Lund University)

We examine the impact of competition on firms’ leniency towards their customers in a heavily regulated market, which is consciously designed to mitigate incentives to deviate from the regulation. Using a panel data set representing 22.5 million periodic vehicle roadworthiness tests during the period 2010-2015, we show that inspection stations operating in more competitive markets are more lenient to their customers than stations operating in less competitive markets. We present both fixed effects and instrumental variable estimates of the effect of competition on firms’ incentive to be lenient to their customers.

Recent Consolidations in the German Interurban Bus Industry: Effects on Prices and Quantities

Samuel de Haas (Justus-Liebig-University Giessen)
Jan Schäfer (Justus-Liebig-University Giessen)

We study effects on prices and quantities in the German interurban bus industry due to takeover of Postbus by Flixbus. Thereby, we provide an empirical assessment of industry key features, using a route-level price data set containing prices for more than 8,000 routes in Germany for a period between September and December 2016. We find that prices significantly increase and quantities decrease in the post-takeover phase. However, these results are mainly driven by the fact, that Postbus was price leader with relatively low prices. It does not seem to be the case that the remaining providers increase their prices significantly in the post-takeover phase. This could be an indication of a strong impact of intermodal competition.

Do you like me enough? The impact of restricting preferences ranking in a university matching process

Nicolas Figueroa (Pontificia Universidad Catolica de Chile)
Jeanne Lafortune (Pontificia Universidad Catolica de Chile)
Alejandro Saenz (Pontificia Universidad Catolica de Chile)

This paper estimates the impact of a policy shift in 2003 where one university within the Chilean deferred-acceptance university matching process started imposing that it would only consider applicants who ranked it amongst the first four options. We show, theoretically, that this leads to a university being able to capture some better candidates from the “middle” of the distribution. We show empirically that this new policy changed the application strategy of potential students and led to a change in the allocation of students to universities in a way consistent with our model.

Shopping hours and entry - An empirical analysis of Aldi’s opening hours

Samuel de Haas (Justus-Liebig-University Giessen)
Daniel Herold
Jan Schäfer (Justus-Liebig-University Giessen)

Since 2007, retail grocery stores are allowed to stay open later than 8 p.m. in most federal states of Germany. Aldi, the biggest discounter in Germany, however, refrained from expanding shopping hours past 8 p.m. until the end of 2015. Starting in 2016, more and more Aldi stores are opened until 9 p.m.. We interpret the decision to extend opening hours of a specific Aldi store as entry into a new market, i.e., the retail grocery market after 8 p.m., and examine the main drivers of that entry. We use a novel panel data set containing the opening hours of Aldi’s main competitors (Lidl, Rewe and Edeka). By controlling for socio-demographic variables such as population density and purchasing power, we find that the presence of a nearby Aldi which is already opened later than 8 p.m. increases the probability that a given Aldi extends its opening hours until 9 p.m.. However, if a Lidl outlet closes already at 8 p.m., the chance that a nearby Aldi extends opening hours past 8 p.m. decreases. These results suggest firm as well as consumer learning to significantly influence a supplier’s decision to extend shopping hours.

Multiproduct Search and Retail Pricing: Some Empirical Results

Hyunchul Kim (Sungkyunkwan University)
Jungwon Yeo (Singapore Management University)

The existence of fixed costs of search or shopping and the consumer's tendency to shop for multiple products create an environment where multiproduct retailers price otherwise independent products in consideration of one another. Theoretical papers have provided insight into how multiproduct retailers price their products in the multiproduct search environment. They have generated predictions that are incomparably unique, or that are at odds with one another, depending on their focus and scope. We hereby attempt to empirically test some of the predictions, more specifically, those made by Lar and Matutes (1994), Chen and Ray (2012) and Rhodes (2015). We use the supermarket scanner data collected by IRI. Our empirical tests provide evidence for the exploitive cross-subsidization proposed by Chen and Ray (2012) and confirm the effect of economies of scale in search on the firm's pricing behavior as predicted by Rhodes (2015).

Measuring the Effect of Dealer Location in the Automobile Market

Jose L. Moraga-Gonzalez (VU Amsterdam)
Zsolt Sandor (Sapientia University Miercurea Ciuc)
Matthijs Wildenbeest (Indiana U)

This paper provides an empirical framework to study dealership network decisions in the car industry, taking specifically into account that the network affects search behaviour. It consists of a demand model based on a search and choice model recently developed by the same authors and a supply model that enables the estimation of dealer marginal and fixed costs related to dealership network. These estimates are crucial for analysing the welfare implications of alternative dealership locations.

Heterogeneous Consumers Matching Heterogeneous Firms in Monopolistic Competition

Sergey Kokovin (Novosibirsk State University, IM SB RAS, NRU Higher School of Economics)
Shamil Sharapudinov (Higher School of Economics)
Alexander Tarasov (Higher School of Economics)

Our novel approach to modeling monopolistic competition with heterogeneous consumers involves a space of characteristics of differentiated good (consumers' ideal points), alike Hotelling (1929). Firms have heterogeneous costs à la Melitz (2003), but choosing its price, every firm chooses also its optimal location, i.e., "niche". We prove "perfect sorting": the most efficient firms choose locations, where the consumer's density is maximal, while the weaker is a firm – the farther it locates from attractive well-populated areas, to escape competition from the strong firms. Other market effects include non-monotone markups, high in the most and least populated zones; and monotone welfare, increasing in population density.

The welfare effects of history-based price discrimination: Evidence from the Dutch mortgage market

Jurre Thiel (Vrije Universiteit Amsterdam)

In markets with switching costs, firms often charge different prices to existing and new consumers. The welfare effects of such history-based price discrimination are theoretically ambiguous. I exploit a ban on history-based price discrimination in the Dutch mortgage market to assess whether history-based price discrimination increases or decreases consumer welfare, bank profits and total welfare. I do so by empirically estimating a

dynamic model of competition on micro level data comprising 80% of outstanding Dutch mortgages. I estimate this model using a new method, by deriving moment conditions from banks' first order conditions.

Identification of Dynamic Models of Market Entry/Exit with a Decision to Buy/Lease Fixed Inputs

Jan Victor Dee (University of Toronto)

This paper studies the identification of dynamic models of market entry and exit where firms can choose to buy or lease fixed inputs. We are particularly interested in the identification of counterfactual experiments that change the stochastic process of the state variables that relate to the selling price and/or leasing price of the fixed input. First, we show that without additional restrictions, the structural functions that represent entry cost, fixed cost and scrap value are not point identified. Second, for applications where the researcher has data on both leasing price and selling price of the fixed input, we propose plausible exclusion restrictions that provide point identification of our counterfactual experiments, despite the structural functions being nonidentified. Third, we propose a simple simulation based method to construct a confidence region for counterfactual choice probabilities in applications where counterfactual experiments are not point identified. We illustrate our results and methods using numerical experiments.

The Economics of Zero-rating and Net Neutrality

Robert Somogyi (Universite catholique de Louvain)

This paper studies zero-rating, an emerging business practice consisting in a mobile internet service provider (ISP) excluding the data generated by certain content providers (CPs) from its consumers' monthly data cap. Being at odds with the principle of net neutrality, these arrangements have recently attracted regulatory scrutiny all over the word. I analyze zero-rating incentives of a monopolistic ISP facing a capacity constraint in a two-sided market where consumption provides utility for homogeneous consumers as well as advertising revenue for CPs. Focusing on a market with two CPs competing with each other and all other content which is never zero-rated, I identify parameter regions in which zero, one or two CPs are zero-rated. Surprisingly, the ISP may zero rate content when content is either very unattractive or very attractive for consumers, but not in the intermediary region. I show that zero-rating benefits consumers if content is attractive, whereas it may decrease social welfare in the case of unattractive content.

Consumer learning in switching mobile tariff

Lukasz Grzybowski (Telecom ParisTech)
Ambre Nicolle (Université de Montpellier and Telecom ParisTech)
Christine Zulehner (Goethe University)

In this paper, we use a database of 93,795 consumers from a European mobile carrier observed on monthly basis in period of between May 2011 and December 2014. We analyze how the events of introduction of new tariffs without handset subsidy and commitment, and the launch of new tariffs with 4G Internet access influenced consumer choices. We estimate a series of discrete choice models to analyze what type of consumers decided to switch to new tariffs. We then study whether consumers who switched to new tariffs adjusted their usage and ended up paying lower bills. We also estimate the role of learning in consumers' decision to switch tariff. We approximate learning by payment overcharges and losses which are measured in units of consumption and in monetary values. Furthermore, we allow for consumer heterogeneity in learning

by interacting consumer characteristics with overage and loss variables. In the preliminary multinomial logit estimation, we find that consumers are more likely to switch tariff when in the previous month they used more units of minutes and data than included in tariff allowance, which resulted in a higher bill. They are also more likely to switch when they used less data than included in tariff allowance.

Price Changes and Inertia: Evidence from Mobile Subscriptions

Bjorn-Atle Reme (Telenor Research)
Helene Lie Rohr (Norwegian Business School)
Morten Saethre (Norwegian School of Economics)

This paper studies consumer inertia in the mobile subscription market. Particularly, we focus on customers' decision to switch to competing providers. We leverage major changes to the tariffs faced by 300,000 customers of a large telecom provider to identify the effect of price changes on the propensity to leave the company. We find that the propensity to switch to competing providers increases also for customers who would pay less under new tariffs, though the increase is higher for customers who would pay more. Noting that the universe of plans offered in the market was otherwise stable around the period of the tariff changes, this suggests that there are customers who have previously not switched to preferred options, i.e. choice inertia. Furthermore, we find that the propensity to switch is at its highest at time when customers are informed about the upcoming change – one month prior to the tariff changes, and decrease back to its previous level over a period of six months. The strong response prior to being affected by new terms implies that active choice behavior can be induced even without learning from experience with new prices. We also provide evidence that increases in fixed fees carry a relatively high weight compared to increases in variable fees in explaining the decision to switch provider.

Competition in Cascades

Rodrigo Moita (Insper Institute)
Daniel Monte (Sao Paulo School of Economics FGB)

Hydroelectric generation is the main source of energy production in many countries. When firms are in the same river, or in cascades, the output of an upstream firm is the input of its downstream rival. We build a dynamic stochastic duopoly model of competition in cascades. We show that the decentralized market is efficient at the critical times when rain is infrequent, but may lead to an inefficient outcome when rain is more frequent. This inefficiency vanishes when the downstream plant is run-of-river. Finally, a concern widely spread in the sector is that upstream firms would exercise market power by holding up production, therefore forcing downstream generator not to produce as well. We show that this happens only in off peak periods, when energy is less valuable.

Supplier Encroachment and Consumer Welfare: Upstream Firm's Opportunism and Multichannel Distribution

Cong Pan (Osaka University)

I revisit supplier encroachment under the framework of a two-part tariff contract. When a monopoly manufacturer supplies competing retailers and contracts are offered secretly, each retailer's lack of knowledge vis-à-vis its rival's contract may undermine the manufacturer's commitment power, which prevents the manufacturer from achieving optimal wholesale profit. I demonstrate that when the manufacturer directly

supplies the resale market, it can restrict the retailers' total quantity and thus restore its market power. Even though the manufacturer's encroachment creates more competitors in the resale market, the resultant higher unit prices aggravate double marginalization, which may thus reduce consumer welfare.

Secret contracts, beliefs and risk aversion

Olivier Bonroy (INRA - Université Grenoble Alpes)
Nicolas Pasquier (Grenoble-Alpes University)

In market of technologies, it is usual to observe one supplier (ex : an innovator) selling inputs (ex: its invention) to several receivers (ex: manufacturing firms). The contracts made are often secret (specifically interim unobservable). In other words, each receiver is aware of the contract he is signing but does not know the agreement made between the supplier and his rivals. Secret contracts raise an equilibrium issue. Perfect Bayesian Equilibrium (PBE) notion is too weak to solve the game correctly because it produces an infinity of equilibria. The modeller has to specify some beliefs to receivers (called out-of-equilibrium beliefs) in order to get a unique equilibrium. Using the largest set of beliefs criterion defined by Eguia et al. 2015, we show that equilibrium actions are affected by receivers' risk aversion level. In particular, the criterion tends to select more equilibrium actions derived from passive beliefs as risk aversion level increases. In other words, passive beliefs are theoretically more credible with risk averse receivers.

The birth and development of Italian automotive industry (1894-2015) and the Turin car cluster: Marshall and Klepper revisited

Aldo Enrietti (University of Turin)
Aldo Geuna (University of Torino)
Consuelo Nava (University of Turin)
Pier Paolo Patrucco (University of Turin)

By discussing the relation between the traditional Marshallian approach and Klepper's understanding of the role of spin-offs, this paper aims to understand the early genesis and later evolution of the Italian automotive industry through the formation of a car cluster in Turin from the late nineteenth century to WWII. Historical analysis and econometric models are integrated to identify key factors that have enabled the creation and the success of the automotive industry in Turin. More precisely, the paper develops a model for the analysis of industrial resilience with which it is possible to understand the current situation, its developments and the policy actions required to support the transition to new systems of production and business organization in the Turin metropolitan area. Localization and persistence of the car industry in the Turin metropolitan area is framed within the current theoretical literature, comparing the traditional Marshallian approach with the analysis of the role of spin-offs pioneered by Klepper. Klepper's hypothesis about spinoffs as driver of industry clustering is tested, and complemented by research hypotheses on an array of further specific factors. We applied a survival analysis based on a Cox regression which partially confirms Klepper's analysis and yet stresses the role of local competencies (level of education and technical skills owned by pilots) and inter industrial externalities with aeronautics.

Congestion Externality and Autonomous Vehicles

Federico Boffa (Free U Bolzano)
Alessandro Fedele (Free University of Bolzano/Bozen)

Alberto Iozzi (U Roma Tor Vergata)

We analyze the market design for autonomous cars (ACs). ACs are self-driving vehicles, driven by a software that does not require human intervention. That of ACs is a relevant market for industrial organization, for at least three reasons. First, companies (Google, Uber, etc) are investing heavily in this market. Second, this may deeply affect the organization of the car transport market. Presumably, people will invest less in private cars, and will use companies (with a foreseeable convergence between taxi and car sharing services). Third, technology (GPS system) substantially improves information on traffic flows. This can potentially improve scheduling, and allow for coordinated forms of traffic centralization. This change generates two important questions for IO. From a theoretical perspective, how do different market structures affect the extent of the internalization of congestion externalities? Second, from an applied perspective, how should an efficient and effective market design for autonomous cars look like?

Winners and Losers: Distributional Effects of the French Feebate Policy on the New Car Market

Isis Durrmeyer (TSE)

In this paper, I estimate the distributional effects of an environmental policy across consumers in the French automobile market. In the beginning of 2008, new automobile purchases became subject to a new CO2 related tax/subsidy (feebate). Exploiting data on aggregate sales at the municipality level complemented by National Survey data on municipality demographic characteristics, I develop and estimate a structural model of demand for new automobile that allows for large heterogeneity in preferences. The use of local data enables me to identify the heterogeneity in preferences by linking average household characteristics in each municipality to the attributes of the cars purchased. Using the structural parameters of demand, I compute the welfare gains and losses of consumers and manufacturers and the distribution of consumers' welfare gains and losses across towns. I find that the feebate policy has an overall negative effect: the increase in consumers surplus and French manufacturers profits do not compensate the deficit used to finance the policy. The average individual surplus increases by 49 euros if no tax is introduced to compensate the deficit of the policy, and decreases by 143 euros with a tax. I also find that the welfare gains are positively correlated to the income when the income is lower than 21,000 euros and negatively correlated otherwise so that the policy appears to favor the middle-class income households. I also find evidence that the policy did not favor the government's electors more than its opponent's electors.

Harmful Pro-Competitive Effects of Trade under Classical Monopolistic Competition

Igor Bykadorov (IM SB RAS, NSU, NSUEM)
Andrea Ellero (Ca' Foscari University of Venice)
Stefania Funari (Ca' Foscari University of Venice)
Sergey Kokovin (Novosibirsk State University, IM SB RAS, NRU Higher School of Economics)
Pavel Molchanov (Aix-Marseille University; NRU HSE)

We find non-monotonic behaviour of welfare gains under trade liberalization in the standard models of (Krugman, 1979) and (Melitz, 2003) with symmetric countries. We analytically show that there are welfare losses from trade for sufficiently high trade costs when preferences are non-CES. Such an effect is explained by the attenuation of the market distortion when countries open to trade. This follows as a corollary of Lancaster and Lipsey's theory of the Second Best: lowering one constraint (trade barriers) leaving the other distortion untouched (monopolistic pricing) may actually hurt welfare. Harmful trade effect is found to be robust to

several extensions, including multicountry or asymmetric world and not additively separable preferences. In addition, we conduct numerical estimation of such welfare losses.

Inter-Industry Wage Inequality, Unemployment, and Competitiveness of Monopolistic Competition Driven by Changes in Consumers' Preferences

Alexander Shapoval (New Economic School)
Vasiliy Goncharenko (Higher School of Economics)

This paper examines the response of economies and, in particular, inter-sectoral wage inequality and unemployment to demand shocks. The analysis is performed by using a general equilibrium model with monopolistic competition in hi-tech sectors and perfect competition in a traditional sector. Hi-tech sectors are horizontally differentiated with respect to labor skills required by production technologies. Motivated by higher wages, workers intend to work in hi-tech sectors but face a risk to be unemployed. Unemployment appears as a consequence of job market frictions. The wages of employed workers are agreed through a bargaining mechanism. Demand shocks are associated with a redistribution of spending from traditional to hi-tech goods. We claim that the whole economy can respond to the shock in two opposite ways increasing a monopolistic or competitive component of the monopolistic competition. In the first case, prices go up, demand for specific varieties decreases, and inter-sectoral wage differential enlarges. All individuals become better off except those who lose their jobs. We predict the reverse shifts in prices, demand and wage differential in the second case. The two responses of an economy are distinguished by consumers' elasticity of substitution between varieties of hi-tech goods. At last, the unemployment increases in both cases.

Continuous Spatial Monopolistic Competition: Matching Goods with Consumers

Maxim Goryunov (EUI, CERGE-EI and NRU HSE)
Sergey Kokovin (Novosibirsk State University, IM SB RAS, NRU Higher School of Economics),
Takatoshi Tabuchi (University of Tokyo)

Our new approach to modelling competition bridges Hotelling and Chamberlin: it enriches the general additive monopolistic competition model (AMCM)—with a space of product characteristics: consumers' "ideal varieties". Unlike Hotelling, such partially localized competition involves intersecting zones of service among (continuously distributed) producers. Then, the uniform equilibrium firms' density increases with growing population, alike usual AMCM. However, now increasing/decreasing prices are determined by increasing/decreasing elasticity of elementary utility (instead of demand elasticity in AMCM). A new characteristic – the firm's range of service – decreases. Such finer matching between buyers and sellers becomes a new source of welfare gain from thicker market, unlike variety benefit in AMCM. The free-entry competition remains socially excessive under some natural preferences.

A Model of Sales in Retailing

Martin Obradovits (University of Innsbruck)

I modify Varian's (1980) classic model of sales to account for a situation where retailers need to stock products in advance before selling. In the model, two or more retailers simultaneously decide how much quantity to purchase from a competitive upstream market, and which price to charge. This simple variation induces a bimodal equilibrium price distribution: retailers either charge a "regular" (monopoly) price and stock low

quantity, or engage in a sale and stock full quantity. The probability of sales is negatively related to the wholesale price, but independent of the fraction of informed consumers (shoppers). With positive probability, wasteful excess quantity is stocked, but also with positive probability, consumers are rationed. The expected welfare loss increases in the fraction of shoppers and in the number of retailers. In an extension, I allow for a strategic upstream monopolist serving the retail market, and analyze the implications for pricing and market performance.

A theory of recommended price dispersion

Marco Haan (U Groningen)
Pim Heijnen (U Groningen)
Martin Obradovits (University of Innsbruck)

This paper contributes to the theory of recommended retail prices. We consider a model with two firms that compete by setting prices in a homogeneous product market. In this market, firms first set a recommended retail price that serves as an upper bound on their actual retail price. The key element is that a fraction of consumers is partially informed, such that these consumers make their purchase decision solely based on recommended prices. We show that if the partially informed consumers use a simple heuristic, recommended retail prices lead to lower retail prices on average. This effect is weakened if consumers have rational expectations.

Wholesale Price Discrimination and Recommended Retail Prices

Maarten Janssen (U Vienna)
Edona Reshidi (University of Vienna)

This paper provides a new rationale for wholesale price discrimination in markets where consumer search. By creating asymmetries between retailers, where ex-ante there are none, a monopolist manufacturer indirectly screens searching consumers. Under wholesale price discrimination, endogenously created low cost retailers sell to a disproportionate share of low search cost consumers, which gives these retailers stronger incentives to compete, resulting in lower retail margins. Moreover, even endogenously created high cost retailers have an incentive to compete more severely given that their competitors have lower prices. The reaction of both low and high cost retailers provides the manufacturer with incentives to lower his prices as well. As under uniform pricing, wholesale and retail prices are inefficiently high, wholesale price discrimination leads to larger profits for the manufacturer and significantly larger consumer surplus. Our paper provides also novel explanations for vertical restraints such as minimum advertised prices (MAPs) and legislation that requires list prices to attract some positive share of sales.

Patents and Standards as Knowledge Sources for Innovation

Jakob Pohlisch (Technische Universität Berlin)
Knut Blind (Technische Universität Berlin)

This paper investigates the impact of using patents and standards as knowledge sources for the innovation performance of firms. While there is sound empirical evidence outlining the significance of using external sources of knowledge for generating successful innovations, little is known about the relevance of patents, and particularly standards as codified external knowledge sources. Furthermore, it is an open question what role

absorptive capacity, i.e. in-house R&D as well as active patenting and standardization can play regarding the effectiveness of using the two knowledge sources. Based on data from the German CIS, we find that both knowledge from patents and standards are important drivers for innovation performance. However, companies without in-house R&D benefit more from those sources than firms with in-house R&D. Furthermore, those companies seem to be able to capitalize more on standards than on patents. By combining the above results with the degree of novelty of innovations, we find that standards are more important for incremental innovations, while patents are more important for radical innovations. Consequently, our findings have important implications, for both companies' innovation management and for innovation policy.

Discrimination against foreigners in the patent system: Evidence from standard-essential patents

Emilio Raiteri (EPFL)

This paper tests for traces of discrimination against foreign firms in the patent prosecution process. It focuses on the case of China and looks specifically at patent applications declared as essential to a technological standard. The choice of standard-essential patents (SEPs) is particularly suited because of the 'strategic' importance of such patents for China's indigenous innovation program. We exploit information on the timing of disclosure as SEP (before or after the patent application enters examination) to infer the likely presence of discrimination. We find that patent applications by foreign firms are treated unfavorably when examiners know that they are declared as standard essential. We interpret this result as a case of technology protectionism.

Over-Declaration of Standard Essential Patents and Determinants of Essentiality

Robin Stitzing (Nokia Corporation)
Pekka Sääskilahti (Nokia Corporation)
Jimmy Royer (Analysis Group)
Marc Van Audenrode

Standard Essential Patents (SEPs) cover technologies necessary to meet an industry standard established in Standard Setting Organizations (SSOs). SEPs are self-declared by patent-holding companies as essential for the implementation of the standard, and are not subject to any SSO review. Loss of enforceability due to failure to declare and the promise of royalty revenue create incentives for firms to over-declare SEPs or to at least to err towards declaring when in doubt. SSO IPR policies to contribute to over-declaration as patent holders are required to declare all patents that might be essential. Changes to patent claims and standard specifications during the patent application prosecution can also imply that a declared patent application no longer matches the standard once granted. We analyze patent and company attributes that are associated with technical essentiality among SEPs of the 4G LTE cellular standard using a unique dataset. Our results show that declaration against a specific technical specification of the standard is a strong predictor of technical essentiality. While there is no general link between forward citations and technical essentiality, we find that citations from SEPs declared to the same standard predict technical essentiality. Patent ownership changes before the essentiality declaration do not affect standard essentiality. Our results provide guidance to the policy debate, and call for a recognition of SEP over-declaration in the economics literature on standardization.

Parallel sessions / Saturday 2 September 2017 / 15:30 – 17:00

Airport Capacity and Inefficiency in Slot Allocation

Pierre Picard (Universite de Luxembourg)
Alessandro Tampieri (University of Bologna)
Xi Wan (University of Luxembourg)

This paper studies the time slot allocation of flight departure when travelers have a preference for departing on peak times and the numbers of available peak time slots are constrained by airport capacities. We show that, compared to public airports, private airports may restrain their supply of peak slots strictly below their capacity levels when they serve airlines that compete to the same destinations. Such an inefficiency takes place in airports that charge low per-passenger fees and are not too busy. It does not occur in the absence of competition in destination markets.

Price Discrimination and Focal Points for Tacit Collusion: Evidence from the Airline Industry

Diego Escobari (The University of Texas Rio Grande Valley)
Joseph Meskey (East Carolina University)Nicholas Rupp (East Carolina University)

We use unique data sets with round-the-clock posted fares and a regression discontinuity design to identify price discrimination in advance-purchase discounts. Price discrimination increases fares by 14% between two and one week before departure, and by 7.6% between three and two weeks to departure. While competition reduces price discrimination, it is unaffected by product variety for a multiproduct monopolist. The results show that the arbitrary thresholds of 7 and 14 days-in-advance serve as focal points for tacit collusion and to implement price discrimination in competitive markets. For round-trip tickets price discrimination depends on the days-in-advance for both the outbound and inbound flights.

Strategic Responses to Competitive Threats: Airlines in Action

John Kwoka (Northeastern University)

Firms compete with each other in numerous routine ways, but particularly interesting are firms' responses to competitive threats to their critical assets and operations. Firms may mount vigorous defenses or launch offensive strategies – even bordering on predatory – against rivals that initiate hostile acts. This paper takes an empirical approach to analyzing such actions, using observed behavior of individual firms to develop basic facts about strategies and responses to competitive threats from rivals in its industry. We use these examples to categorize the types of responses by one firm to another's initiative, and the factors that determine that choice of response in specific circumstances.

Exclusive Dealing with an Active Entrant: A Laboratory Experiment

Hiroshi Kitamura (Kyoto Sangyo University)
Wataru Tamura (Nagoya University)
Nagatomo Nakamura (Sapporo Gakuin University)

This study explores how the first-mover advantage of the incumbent seller affects anticompetitive exclusive dealing with scale economies in laboratory experiments. The possibility of exclusion is sensitive to the timing of the entrant seller's move. If all sellers simultaneously move, the incumbent seller is less likely to adopt divide-and-conquer offers. Thus, compared to the case in which the incumbent seller has the first-mover advantage, the possibility of exclusion decreases. By contrast, if the entrant moves first, the possibility of exclusion increases because the incumbent seller adopts divide-and-conquer offers easily; an active entrant does not necessarily reduce the possibility of exclusion.

(Non)exclusive Contracting under Adverse Selection: An Experiment

Wanda Mimra (ETH Zurich)
Christian Waibel (ETH Zurich)

The performance of markets with hidden information is of central importance in microeconomic theory. We present the results of a comprehensive experiment that distinguishes between the two crucial forms of hidden information, private and common values, in different contracting environments. Contracting environments vary by the degree of power that the screening market side has over the trades of its privately informed customers, from monopoly to nonexclusive competition. The degree of equilibrium play, in particular in the complex cases of common values, is striking. Under private values, competition ensures efficient trades. Under common values, low-type buyers are to a large extent excluded under nonexclusive competition, while such types are only distorted under exclusive competition. This leads to a significantly higher market surplus under exclusive compared to nonexclusive competition under common values.

Exploration in Teams and the Encouragement Effect: Theory and Experimental Evidence

Topi Miettinen (Hanken School of Economics)
Emma von Essen (Aarhus University)
Marieke Huysentruyt (HEC Paris)

This paper analyses a two-person, two-stage model of sequential exploration, where both information and pay-off externalities exist, and tests the derived hypotheses in the laboratory. We theoretically show that even when agents are self-interested and perfectly rational, the information externality induces a standard encouragement effect: a positive effect of first-mover exploration on the optimality of the second-mover exploring as well. When agents are other-regarding and imperfectly optimize, the encouragement effect is strongest. Furthermore, aggregate exploration is weakly higher in our joint search for public good game, relative to the pay-off equivalent canonical voluntary public goods game. Uncertainty thus raises overall efficiency. We test and experimentally confirm our main theoretical predictions using a novel experimental paradigm. Our findings are relevant not only for motivating progress in fields like education and research, development, or health, but also for diverse applications like charitable fundraising, organizational citizenship behaviors, and collective action, as discussed subsequently.

Antibiotic consumption in the UK and the cost of shifting demand away from broad-spectrum drugs

Weijie Yan (University of East Anglia)
Farasat Bokhari (University of East Anglia)
Franco Mariuzzo (University of East Anglia)

High antibiotic consumption, particularly of broad-spectrum drugs, is a public health concern as it contributes to drug resistance. Using aggregate market data from the UK, we estimate demand with discrete choice models and evaluate market performance and distribution of patient-physician preferences over the spectrum of activity. We find that generics and broad-spectrum antibiotics are more profitable than branded or narrow-spectrum drugs, which may have negative implications on R&D. Furthermore, even though sales and the average price have substantially dropped over time, profitability has increased due to a more extensive decline in marginal costs, which is especially significant for broad-spectrum drugs. Our simulations, via increase the cost, provide estimates of demand switching behaviour from broad- to narrow-spectrum agents and the associated welfare change.

Competition and macro-prudential regulation: An empirical model of the UK mortgage supermarket

Matteo Benetton (London School of Economics)

This paper develops and estimates an empirical model of the UK mortgage market and studies the effect of macro-prudential regulation on lending activity. We estimate a discrete-continuous choice demand model of mortgages with a new administrative dataset of the universe of residential mortgage originations. Borrowers decide jointly the mortgage product and the loan size facing a non-linear price schedule and affordability constraints on their choice sets. We derive a pricing equation that takes into account default and refinancing risks and we characterise the Nash-Bertrand equilibrium, subject to risk-adjusted capital constraints. We find that: 1) a 1% increase in the interest rate decreases loan demand by 2% and product demand by 3%, on average; 2) both elasticities are heterogeneous across leverage levels, borrower types and lenders; 3) a 1% higher risk-weight increase lenders' marginal cost by about 1%. We use the estimated parameters to study the pass-through of capital requirements in two different counterfactual regimes.

Two-sided auctions: structural estimation of a wine auction platform with endogenous entry of bidders and sellers

Marleen Marra (University College London)

Contrary to the way auctions are typically modeled, they are often organized by an intermediary who designs an auction platform to maximize his expected profits. Combining elements from two-sided markets and auctions, this paper models an auction platform where both potential sellers and potential bidders enter English auctions endogenously. I derive equilibrium bidding, entry, and reserve price strategies and show the role of auction commissions and other fees. These strategies and thus the demand and supply schedules in this market are correlated and depend nonlinearly on fees meaning the pricing structure is important for platform profits due to cross-side network externalities. In line with a recently developing literature on selection I allow for flexible entry of potential bidders and show that model primitives, including both potential bidders' and potential sellers' valuation distributions, are nonparametrically identified from data that includes only the winning bid, number of bidders, and reserve price. This result is obtained by relying on exogenous variation in the delivery cost reported by the seller and to be paid by the buyer, shifting bidders' expected surplus from entering the auction. Using a unique dataset from an online wine auction platform, counterfactual policy simulations study the welfare impacts of raising or restructuring fees, and also consider the impact of market thickness, platform transparency, the number of potential bidders, and selection.

Tariff Diversity and Competition Policy – Drivers for Broadband Adoption in the European Union

Mirjam Lange (U Frankfurt)

While second-degree price discrimination is standard in commercial practice in many industries and generally is not a matter of policy concern, many consumer advocates and public interest groups have reacted with skepticism against tendencies to move away from flat rates and introduce greater tariff diversity. This paper provides an empirical analysis how the differentiation of broadband tariffs with respect to retail prices affects fixed broadband subscription using time-series data. The empirical analysis is performed using a unique dataset of 10,200 retail broadband offers spanning the 2003–2011 period and including 23 EU member states. Results show that an increase in tariff diversity provides a significant impetus to broadband adoption, wherefore demands by some public interest groups to limit price discrimination in broadband markets should be viewed with some caution as reduced price discrimination may come at the cost of lower penetration rates.

The impact of regulation on broadband diffusion in Europe

Anh Mai (Södertörn U)

This paper separately studies the impact of regulation on diffusion of fixed and mobile broadband in 27 European countries by applying a logistic model. I find a negative impact of the regulation on fixed broadband via the existence of independent regulatory authorities (IRAs) as well as from the policy keeping low prices for shared local loop access since typical conflicts between regulation and investment in broadband infrastructures may exist. The local loop policy is no longer appropriate, especially when infrastructure-based competition is low or when a market lacks of technology standards. However, a regulatory policy that aims to reduce the market power of incumbents or to favor new entry tends to increase diffusion of both fixed and mobile broadband. I also find a significant correlation between independence of IRAs and the broadband diffusion speed. Interestingly, mobile broadband and fiber-to-home/building subscriptions are complementary, which suggests that people preferring high speed internet at home are likely to also subscribe to mobile broadband and vice versa.

Vertical integration and upstream mergers

Ioannis Pinopoulos (University of Macedonia)

We study upstream horizontal mergers when one of the merging parties is a vertically integrated firm. We assume that all of the vertically integrated firm’s upstream production is directed to its downstream affiliate (captive sales). We demonstrate that such type of mergers harm consumers through a vertical partial foreclosure effect even though they do not affect concentration in the upstream merchant market. Moreover, taking into account upstream cost asymmetries, we show that consumer surplus may increase due to the merger even though input prices increase.

Upstream Partnerships among Competitors when Size Matters

Oystein Foros (NHH Norwegian School of Economics)
Hans Jarle Kind (NHH, Norwegian School of Economics)

In several industries we observe that downstream competitors form upstream partnerships. An important rationale is that higher aggregate upstream volume might generate efficiencies which reduce both fixed and

marginal costs. Our focus is on the latter. We show that if upstream marginal costs are decreasing in sales volume, then a partnership among downstream rivals makes the firms less aggressive. In a model with three firms, an upstream partnership between two firms is sustainable. If downstream competition with the non-member is fierce, the two members prefer a pure upstream partnership compared to a complete merger. The reason is that a merger is de facto a commitment to set higher prices. Under aggressive competition from the non-partner, the members do not want to make such a commitment when upstream marginal costs are endogenously determined.

Backward ownership, uniform pricing and entry deterrence

Matthias Hunold (Düsseldorf University)

Non-controlling partial backward ownership of a supplier can lead to entry deterrence when the supplier is committed to supply all downstream firms at equal terms. Foreclosure can occur because downstream incumbents which hold non-controlling shares of their supplier are thereby guaranteed a rebate on input prices. Such backward ownership induces the supplier to charge a lower uniform price to all downstream firms in case of entry. However, just this entry-accommodating behavior reduces entry profits. The article discusses a merger case in the financial services industry as well as general implications for regulation and competition policy.

Product Variety in the U.S. Yogurt Industry

Joseph Rossetti (Ohio State University)

The products offered in an industry determine the profits of firms and consumer's welfare. Giacomo (2008) finds changes in profits and welfare from new products in the Italian yogurt industry to be in the hundreds of millions of euros. I estimate firms' cost of offering additional products using scanner data on the U.S. Yogurt Industry from 2001-2011. The framework in Berry et al. (1995) shows how to identify the variable components of firm profits with scanner data. I follow Ellickson and Misra's (2012) strategy for including data on variable profits in models of firm strategic interaction. Firms offering sets of products have high dimensional choice sets. Therefore I apply the pairwise maximum score estimator of Fox (2007) which provides consistent estimates even when the observed choice set is a subset of a larger set of choices. The cost of adding an additional product is roughly one-third of mean variable profits.

Identifying Incomplete Information Discrete Games without Bayesian Nash Equilibrium

Erhao Xie (University of Toronto)

This paper studies the identification of incomplete information games without imposing Bayesian Nash Equilibrium (BNE). Instead of assuming a player's belief corresponds to other players' actual choice probabilities (i.e. observed), I allow player's belief to be any probability distribution over other players' action sets (i.e. unobserved). Therefore, the econometric model treats belief as an unknown that is estimated together with player's utility function. Such relaxation permits researchers to robustly identify payoff under a weaker assumption and also to learn how players form a belief in games. I study the identification in a class of two-players game in which player 1 has more actions than player 2. Such asymmetric feature, joint with conventionally used exclusion restrictions, point identifies player 1's non-interactive payoff (i.e. part of payoff that is not affected by player 2). Moreover, player 1's interactive payoff (i.e. part of payoff that is affected by

player 2) and her belief are identified up to a scale parameter. However, player 2 is not identified. This identification result is generalized to each player in a multi-player multiple actions game under a conventional parametric assumption. Finally, I apply the identification result into an empirical application that studies the competition between McDonald's and KFC in China.

Demand Volatility, Adjustment Costs, and Productivity: An Examination of Capacity Utilization in Hotels and Airlines

Andrew Butters (Indiana University)

Measures of productivity reveal large differences across producers even within narrowly defined industries. Traditional measures of productivity, however, will associate differences in demand volatility to differences in productivity when adjusting factors of production is costly. I document this effect by comparing the influence of demand volatility on capacity utilization in a high (hotels) and low (airlines) adjustment cost industry. Differences in annual demand volatility explain a large share of the variation in occupancy rates of hotels at the metro area-segment-year level. In contrast, differences in annual demand volatility have no effect on load factors of airlines at the destination-airline-year level.

Auction Mechanisms and Bidding Behavior in Bond Markets: Evidence from Chinese Government Securities

Klenio Barbosa (Sao Paulo School of Economics – FGV)
Dakshina De Silva (Lancaster University)
Hisayuki Yoshimoto (University of Glasgow)

Should treasury bonds be sold through the Spanish auction mechanism rather than through the traditionally-used discriminatory- or uniform-price auction formats? The purpose of this study is to investigate this research question with Chinese treasury bill auction datasets. Notably, we exploit the institutional set-up of four Chinese Government treasury bill issuers: the Ministry of Finance (MOF) auctions off their bills through Spanish-, discriminatory-, and uniform-price formats; the Chinese Development Bank (CDB) and the Export-Import Bank (EIB) sell their bills through discriminatory- and uniform-price formats; and Agriculture Development Bank (ADB) employs only uniform-price format. Our investigation shows that the Spanish auction mechanism generates lower interest rates than the discriminatory-price format in the MOF auctions. Moreover, the discriminatory-price auction format provides slightly lower interest rates than the uniform-price in the CDB and EIB auctions. These results are different from the previous research, in which discriminatory- and uniform-price formats typically generate similar interest rates. In addition, various theoretical predictions based on the common-value framework are tested.

Hybrid Mechanisms: Structural Model and Empirical Analysis

Yangguang Huang (Hong Kong University of Science and Technology)

We study an auction-lottery hybrid mechanism that has been widely adopted in allocating indivisible goods. Based on a perfect Bayesian Nash equilibrium with monotone bid function and selective entry to auction, we show how to structurally estimate the value distribution from observed bids and to evaluate the performance of this mechanism in terms of its efficiency, revenue, and equity. Applying our analysis to a data set from Guangzhou new vehicle license allocation program, we show that a hybrid mechanism can improve equity substantially over a pure action, while still retains 83% of the efficiency and 52% of the revenue of the auction.

Bidding for Contracts under Uncertain Demand: Skewed Bidding and Risk Sharing

Yao Luo (University of Toronto)
Hidenori Takahashi (University of Mannheim)

We estimate the differential impacts of two contractual formats, called Fixed-Price contracts (FP) and Unit-Price contracts (UP), on firm behavior and contract outcomes in procurement auctions. To deal with the procurer's selection of contract formats, we exploit exogenous variation in (i) procurer's backlog level, and (ii) state dependence in the use of the two contract formats. We estimate that FP would reduce the winning price by more than 20%, and reduce the likelihood of participating in an auction by 6% relative to UP for the projects with medium level of project risk. We explain our estimation results with a model of bidding for a contract, capturing the tradeoff between skewed bidding and the risk-sharing effects. We show that the model is semi-parametrically identified. A simulation result suggests that switching from UP to FP would reduce the cost of procurement by X%.

Allocation of Authority and Incentives in Relational Contracts

Akifumi Ishihara (National Graduate Institute for Policy Studies)

We consider a relational contracting model in which the parties choose whether to allocate authority either to the principal (centralization) or to the agent (delegation). The party who has authority chooses a project, and the agent exert effort to successfully execute the project. Under delegation, although the agent's effort is motivated by his authority, the project selected by the agent may be inefficiently biased toward the agent's favourite one to deter the agent's deviation to his most favourite project. Consequently, delegation (centralization) is inclined to be optimal for the parties with low (high) discount factors.

Team Incentives with Imperfect Mutual Inference

Alice Su (National Taipei University)

I study the optimal team incentive when the agents can coordinate private actions through repeated interaction with imperfect public monitoring. The agents are able to imperfectly infer each other's private actions via the stochastically correlated measurements. Correlation of measurement noise, besides its risk sharing role in the conventional multiple-agent moral hazard problem, is crucial to the accuracy of each agent's inference. The principal's choice of performance pay to provide incentive via inducing competition or coordination among the agents thus exhibits the trade-o between risk sharing and mutual inference between the agents. I characterize the optimal form of performance pay with respect to the correlation of measurement noise and find that it is not monotonic as suggested by Holmstrom and Milgrom (1990).

Gift-exchange vs. repeated interaction as a source of reciprocal behavior: The optimal provision of incentives over the course of careers

Matthias Fahn (University of Munich)
Anne Schade (LMU Munich)
Katharina Schuessler (LMU Munich)

Humans reciprocate. We want to return favors we have received, but also respond appropriately to behavior that we regard as unfair against us. Whereas previous research has typically tried to isolate the most prominent explanations for reciprocal behavior – inherent preferences for reciprocity and repeated interaction – the present paper addresses the question if and how those interact. Developing a theoretical model of a long-term employment relationship, we first show that reciprocal preferences are more important when an employee is close to retirement. At earlier stages, repeated interaction is more important because more future rents (which increase players' commitment in this case) can be used to provide incentives. Preferences for reciprocity still affect the structure of an employment relationship early on, though, because of two reasons. First, preferences for reciprocity effectively reduce the employee's effort costs. Second, they allow to relax the enforceability constraint that determines the principal's commitment in the repeated interaction. We test our main predictions using data from the German Socio-Economic Panel (SOEP) and find cross-sectional evidence for a stronger positive effect of positive reciprocity on effort and wages for older workers.

How intermediates trade affects the formation of Free Trade Agreements: A study analyzing pairwise trade flows of 70 countries

Bianca Willert

International trade and fragmentation of production lead to increased trade in intermediate goods. Increased multi-stage production promotes the formation of free-trade agreements (FTA). In this paper, the relationship between intermediates trade and FTAs is examined with a two-step Pseudo Poisson Maximum Likelihood model. The analysis of a comprehensive dataset of pairwise trade-flow data of 70 countries from the years 1995-2011 shows a significant connection between trade in intermediates and the participation in free-trade agreements. A two-way relationship is identified: intermediates trade increases the probability to form a FTA and FTAs lead to an increase in intermediates trade.

To Harmonize or To Recognize? International Bargaining over Vertically Differentiated Product Standards

Jan Guldager Jorgensen (U Southern Denmark)

This paper models a two-country bargaining process over the coordination of vertically differentiated quality standards. When the foreign firm's initial standard is less stringent, we show that when bargaining occurs, the Home chooses to open its market, and depending on the compliance costs, the optimal standard on imports is one of two polar cases, i.e., either "harmonization" or "mutual recognition," irrespective of a continuum of standards being available. Our results largely hold when the foreign firm's standard is more stringent, although when compliance costs are sufficiently high, bargaining would fail and the Home would choose not to import.

Trade and social interactions in vertically differentiated markets: how do national consumption habits diffuse?

Jean Gabszewicz (Université Catholique de Louvain)
Marco Marini (University of Rome)
Skerdilajda Zanaj (University of Luxembourg)

Opening trade enhances social interactions between citizens of different countries or regions, and vice versa. Interpersonal exchanges in turn increase the trade flows between countries. Accordingly, these interactions

influence the national markets, here assumed vertically differentiated, and their prices. We analyze the interaction between the increased mobility following the opening of trade between two different countries and the corresponding effects on market quantities and prices in the two countries. The main outcome of our analysis consists in showing that the market price tends at the limit to align with the duopoly solution. Nonetheless, this convergence can take two different paths depending on the size asymmetry between the countries.

The diffusion of new institutions: evidence from the Renaissance Venice's Patent System

Stefano Comino (Università di Udine)
Alberto Galasso (University of Toronto)
Clara Graziano (U Udine)

What factors affect the diffusion of new economic institutions? This paper examines this question exploiting the introduction of the first regularized patent system which appeared in the Venetian Republic in 1474. We begin by developing a model which links patenting activity of craft guilds with provisions in their statutes. The model predicts that guild statutes that are more effective at preventing outsider's entry and at mitigating price competition lead to less patenting. We test this prediction on a new dataset which combines detailed information on craft guilds and patents in the Venetian Republic during the Renaissance. We find a negative association between patenting activity and guild statutory norms which strongly restrict entry and price competition. We also show that guilds which originated from medieval religious confraternities were more likely to regulate entry and competition, and that the effect on patenting is robust to instrumenting guild statutes with their quasi-exogenous religious origin. We find that patenting was more widespread among guilds geographically distant from Venice, and among guilds in cities with lower political connection which we measure exploiting a new database on noble families and their marriages with members of the Great Council. Our analysis suggests that local economic and political conditions may have a substantial impact on the diffusion of new economic institutions.

Technology giants in patent wars: competition, litigations and innovation

Heli Koski (Aalto University)

Between the years 2007 and 2012, there was a dramatic upsurge in the patent infringement cases involving major technology companies, particularly those competing in the smartphone markets. We use quarterly data from 2005 to 2014 to empirically explore the relationship between the patent litigations and the quantity and quality of patent applications filed in the USPTO by 20 major technology companies. In most U.S. patent infringement cases, large technology companies were the defendants or targets of patent litigation. The empirical estimation results do not provide support for the suggestion of prior literature that the fragmented ownership of patents tends to generate patent portfolio races. Our data suggest that patent races among technology giants are rather driven by aggressive patent litigations or an increase in the number of patent infringement litigation cases in the firms' major geographical market area. Our data further provide support for the view that patent portfolio races driven by the threat of legal disputes are not generating more valuable patented inventions. Instead, though the stock of patents filed by large technology companies due to patent wars are larger, their quality tends to be lower measured both by forward citations and patent family size.

Patents and Cumulative Innovation – Evidence from Post-Grant Patent Oppositions

Fabian Gaessler (MPI for Innovation and Competition)
Dietmar Harhoff (Max Planck Institute for Innovation and Competition)
Stefan Sorg (Max Planck Institute for Innovation and Competition)

Using large-scale data on opposition to patents at the European Patent Office (EPO), we investigate the causal effect of a patent's invalidation on follow-on inventions. We introduce a new instrumental variable exploiting the participation or absence of the patent examiner in the opposition proceeding. According to our baseline model, patent invalidation leads to a highly significant and sizeable increase of forward citations. While this is in line with previous studies, disentangling the effect leads us to results that stand in stark contrast to some of the literature. We find that the effects are most pronounced for patents in discrete technology areas, for areas where patent thickets are absent and for patents which are not protected by "patent fences". Moreover, the effect is particularly strong for relatively small patent holders facing comparatively small follow-on innovators. We confirm these results using technology-specific samples of opposition cases, and citation measures based on either EPO or US Patent and Trademark Office citation data.

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