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BERLIN CENTRE FOR CONSUMER POLICIES

BCCP Newsletter

Research results for policy

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Dear readers,

Welcome to the fourth issue of the BCCP Newsletter.

Early this summer, the Leibniz Association approved funding for the second four-year phase of our Leibniz WissenschaftsCampus BCCP, which started in October this year. We are extremely happy and grateful for this trust and we look forward to the next four years with all of you. We also warmly welcome our new partner institution, the Alexander von Humboldt Institute for Internet and Society (HIIG), which has now joined the BCCP.

In this newsletter, we have a strong focus on competition and behavioral issues. On the former, we look at the effects of mergers in the mobile telecommunications industry on both static and dynamic efficiency, pointing to a trade-off between the two. We then study the European Commission's merger decision procedures over the first 25 years of European merger control, highlighting some major changes following the introduction of the so-called "more economic approach." We further provide evidence that common ownership between a brand firm and a potential generic entrant decreases the probability of generic entry in the US pharmaceutical industry. In another contribution, we show that the mobility of inventors is not unilaterally negative for employers as it also increases the likelihood of subsequent alliance formation or joint R&D programs. Various other contributions focus on behavioral questions. For example, we study the behavioral response to a sudden outbreak of an epidemic finding that an increase in the incidence of dengue led to a change in education-related behavior of unafflicted students. We then discuss intertemporal crowding in fundraising for charities. The results of a large-scale experiment are in line with a behavioral adaptation of the simple expected utility model. Further, we explore the diffusion of compliance within neighborhood networks, showing that mailings to potential evaders of TV license fees made nearby cheaters more likely to comply. Another contribution shows that beliefs can be a means of self-control, suggesting that biased beliefs need not be irrational per se. Finally, we show the distributional implications of heterogeneous life expectancy for the pension system, which can become regressive for certain groups of employees. On our new focus on digitization, we consider how to decrease antibiotic resistance, showing that policy measures based on comprehensive individual data and machine learning can reduce the number of unnecessary prescriptions and increase the number of expedient prescriptions.

As usual, stay tuned: the new year will bring further developments to the BCCP and all of its partners.

Tomaso Duso

BCCP speaker

kjpargeter / Freepik

Static or Dynamic Efficiency: Horizontal Merger Effects in the Wireless Telecommunications Industry

In this recently published article, BCCP Senior Fellow Michał Grajek and his co-authors Klaus Gugler, Tobias Kretschmer and Ion Mişcişin shed light on the broader efficiencies related to merger activities by investigating effects that go beyond the standard price effects. In particular, the authors are interested in how the immediate price effects of mergers and acquisitions (M&As) correlate with other important economic indicators, such as investment in quality and innovation.


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It is well established that M&As directly influence price levels in the industries undergoing concentration, which justifies the existence of (horizontal) merger control. Further, there are a number of studies concluding that merger-related efficiencies can outweigh the increase in market power, thus rendering mergers pro-competitive, especially over the long-term. More generally, long-term, dynamic merger efficiencies are often studied in terms of the merger's impact on investments and innovations. However, early economic literature on this is largely inconclusive. Two explanations for the inability to find general conclusions about the role of mergers for dynamic efficiency are that i) the effects may not be linear and ii) there may be substantial heterogeneity in the way dynamic efficiencies are realized across industries.

The novelty of this paper is to study the effects of M&As on both market prices and firm investments to see if the static and dynamic effects are related. To this end, the authors use a multiple-single-case approach: They study five mergers among mobile telecommunications carriers in four European countries and look at the effects of mergers on two outcomes: prices as a measure of static efficiency, which is determined by the current firm's market power and costs, and capital expenditures as a measure of the firms' investment incentives. While there is no way of statistically comparing the five cases, interesting patterns emerge: In two out of the five cases, the effect on static efficiency is positive, in two, it is negative (in one it is insignificant), but in nearly all scenarios, merging as well as rival firms' prices moved mostly in the same direction. Moreover, the authors find a positive correlation between the price and the investment effects. In markets with an increase in price (i.e., a decline in static efficiency), all firms reported an increase in capital expenditure, suggesting a stronger focus on dynamic efficiency; the opposite effect prevails in the markets that saw a decrease in prices after a merger. These results point to a trade-off between static and dynamic efficiency: while two countries provide indicative evidence of an increase in static efficiency at the expense of less investments, the other two displayed higher investments into future infrastructure at the expense of higher post-merger prices.

In a narrow sense, this article contributes to the literature on merger effects in the telecommunications industry. However, the results make two broader points: i) mergers must be assessed for their static and dynamic effects on the evolution of an industry and ii) the effects of mergers are highly context specific, even in the same industry. From a policy perspective, it is also notable that competition policy may interact with science and technology policy in the sense that investments in infrastructure may be affected by competition policy instruments. This calls for an integrated view on these two policy aspects.

The full paper ›Static or dynamic efficiency: Horizontal merger effects in the wireless telecommunications industry‹ is published in the *Review of Industrial Organization*, Volume 55 (November), 2019, pp. 375-402.

25 Years of European Merger Control

Competition policy, i.e. the design and enforcement of competition rules ensuring that companies compete fairly with each other, is a cornerstone of the European Union's program to enhance the European single market and foster growth. Competition policy covers four policy areas ranging from monitoring and blocking anticompetitive agreements, to abuses by dominant firms, to mergers and acquisitions, and state aid. Among these areas of antitrust enforcement, merger control plays a special role, as it is the only area of ex-ante enforcement. Since 1990, when the European Communities Merger Regulation came into force, all major concentrations must be notified and scrutinized by the Directorate-General for Competition (DG Comp) of the European Commission (EC) to ensure that consumers are not harmed. Depending on the existence and intensity of the potential harm caused by the merger, the EC can clear, block, or accept modifications to the original transaction that solve the identified competition concerns.

In this recent working paper, BCCP Fellow Pauline Affeldt, BCCP Senior Fellow Tomaso Duso, and Florian Szücs study the time-dynamics of the EC's merger decision procedure over the first 25 years of European merger control using a relevant market level dataset containing all merger cases with an official decision documented by DG Comp between 1990 and 2014. Specifically, the authors evaluate how consistently different arguments related to the structural market parameters – market shares, concentration, likelihood of entry, and foreclosure – put forward to motivate a particular decision are applied over time.

In a first step, the authors estimate the probability of intervention – remedies or blockings – by DG Comp as a function of merger characteristics at the merger level. They find that the existence of barriers to entry, the increase of concentration measures, and, in particular, the share of product markets with competitive concerns increase the likelihood of an intervention. In order to obtain a more fine-grained picture of the decision determinants, the analysis is extended to the specific product and geographic markets concerned by a merger. At the market level, more determinants are found to significantly affect the Commission's competitive concerns than at the merger level. Again, barriers

to entry, as well as the risk of foreclosure, play an important role for the competitive analysis. Moreover, while tightly defined (national) markets increase the probability of concerns, the number of active competitors decreases it. Finally, structural indicators of market shares and concentration have the expected effects, which are more relevant than in the merger-level analysis.

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After this static analysis, the authors investigate how the impact of these key determinants changes over time. The importance of market shares and concentration generally seems to have declined over time. However, the parametric estimations are quite volatile and do not allow for uncovering clear patterns over time. Therefore, in a final step, the authors use a non-parametric causal forest algorithm, to more precisely explore how the correlation between the structural market parameters and competitive concerns varies with all other merger and market characteristics. They find that concentration as well as the merging parties' market shares have become less important decision determinants over time and are even insignificant in most recent years. On the other hand, the importance of barriers to entry as well as risk of foreclosure has increased over time in DG Comp's merger assessment since the early 2000s. This is in line with the goals of the 2004 merger policy reform, which sought to adopt a more economics based approach of merger assessment, putting less weight on simple structural indicators.

The full paper ›25 Years of European Merger Control‹ is available as *DIW Discussion Paper* No. 1797.

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BlackRock or Blockdrug? Common Ownership Reduces Market Entry of Generic Drugs

Investors' holdings in multiple firms give rise to what is known as ›common ownership.‹ Are rival firms' strategic decisions influenced by the presence of common ownership? In this recent working paper, BCCP Doctoral Student Melissa Newham and BCCP Senior Fellow Jo Seldeslachts, together with Albert Banal-Estanol provide evidence that common ownership can affect market entry, one of the most important strategic decisions firms make, in US pharmaceutical markets.

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In 2015, BlackRock and Vanguard were the top two shareholders in Johnson & Johnson, Pfizer, Abbott Laboratories, Perrigo, and Allergan, all among the largest brand or generic drug companies. Common ownership is a pervasive feature not only of pharmaceutical companies, but also of many industries in the US and Europe. While large institutional investors may own at most 5-8% of a single company, this is normally enough to position them as a top investor with privileged access to the firms' management.

Firms that are largely owned by shareholders who also have sizeable stakes in competitors might just simply act in these shareholders' interest, which leads them – rather than maximizing their own profits – to maximize the return of their shareholders' portfolios. This possibility has led to claims that common ownership is ›the major new antitrust challenge of our time‹ (see Posner et al., 2017).

In this paper, the authors analyze the impact of common ownership on market entry. Specifically, they consider generic firms' entry decisions into drug markets opened up by the end of regulatory protections. Pharmaceutical firms can be categorized as brand or generic firms. Brand firms undertake costly research and development to discover new medications and bring them to market. Generic firms, on the other hand, produce bioequivalent replications of brand drugs at a much lower cost, once the regulatory protections afforded to the brand product expire.

Maintaining monopolized markets is crucial for brand firms. With generic entry, revenues can decline by as much as 90%. Moreover, losses to the brand and gains to the generic are highly asymmetric; brand losses typically exceed what an entrant can expect to gain from entry. Thus, entry decisions may crucially depend on whether owners of generic firms also have an interest in brand firms.

Equipped with a rich database, consisting of 451 drug product markets and 58,737 drug product-brand-generic observations, the authors show that a higher level of common ownership between a brand firm and a potential generic entrant is robustly linked with a lower probability of generic entry. The effect is large: a one-standard-deviation increase in common ownership decreases the probability of entry by that generic firm by 9-13%. They also find that common ownership has an economically significant effect on total generic entry: a one-standard-deviation increase in overall common ownership at the market level decreases the total number of generics in that market by 11-13%.

This research provides evidence that is consistent with the hypothesis that common shareholders indeed influence strategic decisions of companies. Given the importance of generic entry in terms of reducing drug prices and, subsequently, overall healthcare costs, common ownership in the pharmaceutical industry may have the potential to increase what consumers and healthcare providers pay.

The full paper ›Common Ownership and Market Entry: Evidence from the Pharmaceutical Industry‹ is available as *DIW Discussion Paper* No. 1738.

How Mobility of R&D Workers Opens New Avenues

R&D employees moving from one employer to another is a frequent, yet controversial, event. On the one hand, inventor mobility is shown to positively affect overall innovative activity. The fast development of new technologies in regional clusters like Silicon Valley is driven by dynamic labor markets combined with the high turnover rates of engineers, programmers, and developers. At the firm-level, learning-by-hiring is a fast and efficient way to acquire external knowledge. From the perspective of a firm that loses key employees, outbound mobility, on the other hand, creates costs for finding suitable replacements and is associated with the risk of losing not only employees but also crucial knowledge, knowledge that potentially is employed by the hiring firm to compete in related markets.

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There are, however, some cues that there is also a positive side to outbound-mobility. Mobile employees potentially create a beneficial link between their old and new employers that facilitates future collaboration between these two firms. In this recently published article, BCCP Senior Fellow Stefan Wagner and Martin C. Goossen seek to better understand this phenomenon by focusing on the mobility of R&D scientists in the global pharmaceutical industry. Initial interviews reveal that it certainly is true that managers are concerned about leakage when their R&D scientists leave to join competitors. However, they also acknowledged that while mobile scientists might be out of sight, they are not out of mind. The interview partners highlight that mobile employees create new or additional touchpoints with the hiring company. This facilitates subsequent transactions between the two organizations, including licensing agreements or the formation of strategic alliances. This narrative is well aligned with the authors' quantitative findings from a large-scale longitudinal study. The findings reveal that mobility of inventors is associated with a statistically significant increase in the likelihood of subsequent alliance formation or the start of a joint R&D program.

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Decisions about R&D partnerships are notoriously tricky for firms. First, firms have a hard time assessing the technological capabilities of potential partners from the outside. Second, expectations about the strategic goals of potential partners and the actual management of R&D projects need to be formed before a partner can be selected. The authors find that mobile scientists impact the joint decision-making process at their new employer at both technological and organizational levels. First, they provide insider information about the technological capabilities of their prior employer, increasing the confidence that their new employer will have in a possible partnership. Moreover, they can envision how molecules, solutions, and other technologies of both firms can be combined into new jointly developed products. Both should facilitate the formation of R&D partnerships between their old and new employers.

Second, and different from the provision of technological information, mobile employees also help align organizational mindsets. Often, the formation of R&D partnership is aggravated by different organizational beliefs about which trajectory to follow in a partnership and the potential for opportunistic behavior of potential partners. Inventors with employment experience at both partners can bridge different perceptions. Their involvement is critical as it reduces misunderstanding and conflict in the negotiation of a partnership. Consequently, inventor mobility increases the chances of collaboration between their new and former employer compared to collaboration between their new employer and other firms.

This article adds to the larger understanding of the sociological context of business transactions and informs the debate on employee mobility. Some firms have called for more stringent non-compete agreements, forbidding employees to join competitors, or even participated in anti-competitive practices limiting the mobility of their employees. Yet, politicians have refrained from creating such legislation and courts often declared mobility-limiting contractual clauses invalid. This article reveals that employee mobility is not unilaterally negative for employers as former employees can generate new avenues of collaboration and the direction of business.

The full paper ›Knowing Me, Knowing You: Inventor Mobility and the Formation of Technology-Oriented Alliances‹ is published in the *Academy of Management Journal*, Volume 61 (December), 2018, pp. 2026-2052.

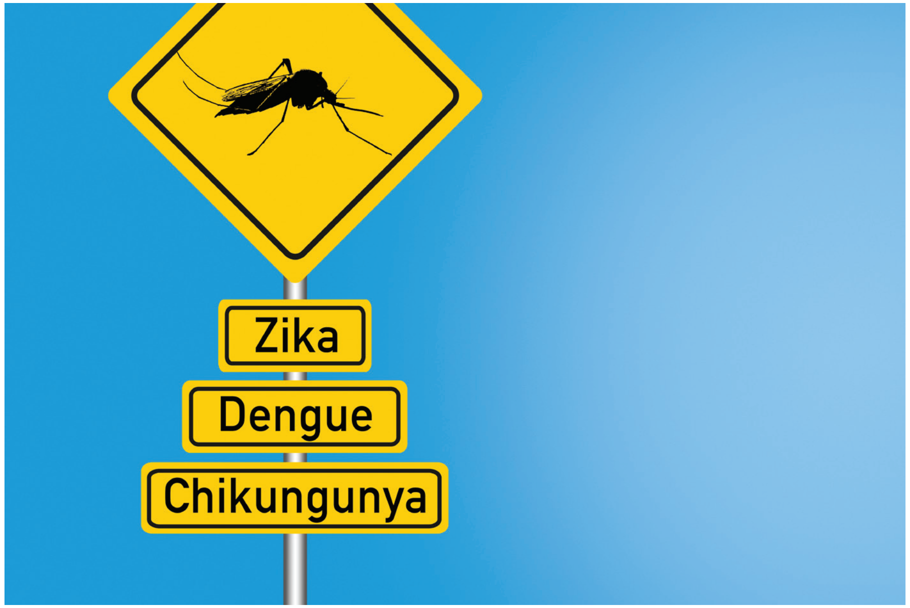
Panic Induced by an Epidemic Can Drastically Affect Everyday Life

Confronted by a widespread epidemic (e.g. dengue, Ebola, or Zika virus), people must decide whether to make any changes to their everyday lives. Often information about the precise risks of infection is scarce and imperfect. People therefore err on the side of caution and respond by adjusting their daily lives and taking extreme preventative action, such as avoiding public places and reducing hospital visits.

In this recently published article, BCCP Fellow Kai Barron and his co-authors Luis F. Gamboa and Paul Rodriguez-Lesmes study the behavioral response to one such sudden outbreak, namely the 2010 Dengue epidemic in Colombia. In particular, the authors evaluate the influence of this sudden outbreak on the school outcomes of unafflicted students.

Dengue is currently the most prevalent mosquito-borne viral disease afflicting humans, with a 30-fold increase in incidence over the last 50 years and an estimated 50 million annual infections worldwide (WHO, 2009). During the 2010 epidemic in Colombia, there was an increase of over 200 per cent in the incidence in comparison to the previous year. The authors show that an increase in the incidence of dengue in a particular geographical area lead to a change in education-related behavior of unafflicted students. In particular, they find that between 1.9 and 4.7 fewer students, out of a typical cohort of 47 pupils, took their school leaving examination for every additional 10 cases of severe dengue per 10,000 inhabitants in a municipality. Ruling out several possible mechanisms, the authors propose an increase in the salience of the disease's risks as a plausible explanation for their findings.

The full paper ›Behavioural Response to a Sudden Health Risk: Dengue and Educational Outcomes in Colombia‹ is published in the *Journal of Development Studies*, Volume 55, 2019, pp.620-644.



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Donations over Time are Substitutes but Habit Formation is also Important

There are numerous ways to encourage charitable giving, ranging from simple solicitations to complex incentive schemes. For all these methods, a fundamental question is whether they crowd-in or crowd-out contributions. This is extensively studied for tax rebates and matching incentives. More recently, the question of whether solicitations for a new cause generate additional donations or simply replace donations that would have been made to other causes has attracted considerable attention. This is important as almost all charities that solicit donations engage in repeated fundraising calls.

In order to study intertemporal crowding, BCCP Senior Fellows Maja Adena and Steffen Huck conducted a repeated large-scale experiment in conjunction with a German opera house. The study examines intertemporal crowding in fundraising for the same charitable project in two subsequent field experiments. In the first year, opera customers receive a fundraising letter asking them to contribute to a charitable project. The project offers workshops for children from economically disadvantaged areas with a focus on culture and integration. In the control treatment, the recipients received a solicitation letter that asked them in a standard way to donate money. In the treatment group, donors' beliefs about the likelihood of future fundraising calls are increased through the insertion of additional words and phrases that are suggestive of repetition in the future. The experiment is repeated in year two with a subset of previous and a set of new recipients.

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Overall, the response rate is not affected by treatments, that is, the share of recipients who decide to give is very similar between treatments. The data shows that donors give less when their beliefs about a second period of fundraising are shifted upwards (crowding out) but also that they give more in the second period if they gave more in the first period (persistence in giving). Hence, the results are in line with a behavioral adaptation of the simple expected utility model that (i) accounts for habit formation and (ii) assumes repeated donations are substitutes.

The main findings have implications for both philanthropy theory and for practical fundraising purposes. For practical purposes, it is clear that the design of an initial campaign must carefully take future plans into account.

The full paper ›Giving Once, Giving Twice: A Two-Period Field Experiment on Intertemporal Crowding in Charitable Giving‹ is published in the *Journal of Public Economics*, Volume 172 (April), 2019, pp. 127-134.

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Diffusion of Compliance in Neighborhood Networks

Measures that induce people to comply with laws can encourage others in their neighborhood to comply, even if they are not targeted directly, according to research by BCCP Senior Fellow Christian Traxler and co-authors Francescos Drago and Friederike Mengel. The article sheds light on an important issue for policymakers – how to maximize the impact of enforcement measures.

The research builds upon a randomized trial that sent different types of mailings to potential evaders of TV license fees in Austria. While earlier work examines the direct effects of these mailings, the current study uses much richer data, involving over 500,000 households from rural Austria. The data allows the researchers to observe if and how "untreated" households changed their compliance behavior in response to enforcement mailings sent to their neighbors. More specifically, the authors examine whether, and under which circumstances, the mailings spurred non-recipients to comply.

The results indicate that untreated households were indeed responsive. The mailings made nearby cheaters more likely to switch from evasion to compliance. While these indirect effects were small at the individual level, they added up to a sizable number. In fact, the overall spillover was similar to the size of the direct effect of the mailing campaign.

The study also analyzes how the geographic structure of neighborhood networks – which shapes communication – influences the spillover effects. It looks at which households are ›best targeted‹ (depending on their position within a network) to maximize spillover effects, and whether these effects are larger when treatments are widely spread or locally concentrated within nearby neighbors. The results indicate that targeting highly ›diffusion central‹ households is a good idea, while local treatment concentration is bad as it leads to lower treatment spillovers. These later findings also might be relevant for other applications (such as marketing campaigns, the spread of technological innovation, etc.) where communication among neighbors spurs indirect effects.

The full paper ›Compliance Behavior in Networks: Evidence from a Field Experiment‹ is forthcoming in the *American Economic Journal: Applied Economics*.

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Beliefs as a Means of Self-Control? Evidence from a Dynamic Student Survey

The development of a behavioral model capturing how individuals put excessive weight on pleasure and pain in the present, relative to the future, is one of the most influential contributions of behavioral economics. This excessive weight on the present leads to a self-control problem. A typical example of this is studying for an exam, which imposes costs now for benefits later. Here, overvaluing the present means studying too little.

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Numerous studies show that people's beliefs are biased toward wishful thinking. Could it be, then, that people form systematically biased beliefs in order to overcome self-control problems, such as that of studying? In this recent working paper, BCCP Fellows Tobias König, Sebastian Schweighofer-Kodritsch, and BCCP Senior Fellow Georg Weizsäcker present the first field evidence that this is indeed the case.

The three authors regularly surveyed about 120 first-semester students throughout the semester, asking about their study plans and expectations regarding one particular class. The authors assumed that students might motivate themselves to study more by subjectively exaggerating the returns of this effort. In the hot phase close to the exam, studying and, hence, self-control are particularly important, such that the students might then be particularly optimistic about the returns to studying. Upon having completed the exam, they might become realistic because the motive for distorting one's beliefs is gone. This yields the testable hypothesis that students believe that the returns to studying are higher before the exam than afterwards.

Testing this hypothesis faces the challenge that students' beliefs may change in various ways as they consume information that the researchers do not observe (for example, as a result of seeing a TV discussion about the German higher education system). However, the fact that respondents wrote their exams at two different times (separated by almost eight weeks) allows the simultaneous comparison of the beliefs of one group, which is about to write their exam, with those of another group, the "control group" whose exam is still in the future or has already passed. This controls for information that systematically affects all beliefs, whereby the crucial difference between groups remains valid: whether or not a respondent is close to an exam or not. In this comparison, the authors' hypothesis is confirmed. Relative to the control group, the expected returns to studying of those students who are about to write their exam are significantly higher than those in the control group, with expectations dropping significantly after the exam.

This result suggests that biased beliefs need not be irrational, per se, but may have a material (economic-instrumental) value. The next important step is to more deeply understand the psychology of such biased belief formation in order to optimally design information provision that best supports people in motivating themselves and achieving their goals.

The full paper ›Beliefs as a Means of Self-Control? Evidence from a Dynamic Student Survey‹ is available as *WZB Discussion Paper* SP II 2019-204.

The Rising Longevity Gap by Lifetime Earnings-Distributional Implications for the Pension System

In most OCED countries, life expectancy has been strongly increasing over the last decades. At the same time, there is large country-specific heterogeneity in life expectancy within a birth cohort; for example by education, region, wealth, and income. This heterogeneity can induce strong distributional effects through the pension system, if - as present in most countries - pension income is linked to earnings in working life. Specifically, since, ceteris paribus, individuals with high lifetime earnings have a higher life expectancy, they will receive their monthly pension income for a longer period than individuals with lower lifetime earnings. In this case, the pension system redistributes from the lifetime rich to lifetime poor individuals.

BCCP Senior Fellow Peter Haan, Daniel Kemptner, and Holger Lüthen analyze these distributional implications for the German pension system and document how the distribution effects have changed over time.

Based on administrative data covering the universe of German retirees, first they analyze the heterogeneity in life expectancy by lifetime earnings of West German male employees and show how the earnings-related longevity gap has evolved over 24 cohorts, born from 1926 through 1949. They document a strong association between lifetime earnings and life expectancy at age 65, showing that the longevity gap is increasing across cohorts. For West German male employees born between 1926 and 1928, the difference in life expectancy at age 65 between the top and bottom deciles amounts to about 4 years or close to 30%. For this group, the gap increases to about 7 years (almost 50%) for the 1947-49 cohorts. Further, they show that the increase in the longevity gap is driven by a larger increase in life expectancies in the upper deciles. For individuals in the bottom decile, life expectancy hardly changed over time.

In the second part of the article, the authors focus on the distributional implications of heterogeneous life expectancy for the pension system. The earnings-related heterogeneity in life expectancy has sizable and relevant distributional consequences for the pension system. The authors show that, under the hypothetical assumption of homogenous life expectancy, the German pension system is progressive, which is mainly explained by early retirement programs. However, when accounting for the empirical heterogeneous life expectancy, the distributional implications turn around: since the relation between lifetime earnings and life expectancy is so strong in Germany, the authors find that the pension system is regressive for West German male employees despite the strong link between benefits and prior contributions in the German pension formula. Finally, they document – consistent with the increasing longevity gap – an increase of the regressive structure across cohorts.

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The full paper ›The Rising Longevity Gap by Lifetime Earnings: Distributional Implications for the Pension System‹ is forthcoming in the *Journal of the Economics of Ageing*.

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Battling Antibiotic Resistance: Can Machine Learning Improve Prescribing?

Antibiotic resistance is a major health policy challenge. As resistance has developed to all newly developed antibiotics, their therapeutic value has diminished over time. Although a lack of financial incentives for developing new antibiotics is a large problem for the health care sector, it can be addressed by implementing supply-side policy measures, such as subsidies or exceptions within the patent system. Another way to address this problem is to focus on physicians' prescription practices, which can play a leading role in preserving the therapeutic benefit of existing medications. Both unnecessary over-prescribing that exposes bacteria to active ingredients and under-prescribing that enables resistant bacteria to survive and evolve support resistance.

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BCCP Fellow Michael A. Ribers and BCCP Senior Fellow Hannes Ullrich consider the case of suspected urinary tract infections in Denmark to show how policy measures based on comprehensive individual data and machine learning can reduce the number of unnecessary prescriptions and increase the number of expedient prescriptions. They show that data-based predictions can differentiate among bacterial and non-bacterial infections so well that a reduction in written prescriptions of around 7.42 percent is possible without reducing the number of treated bacterial infections. Currently available diagnostic methods in general practitioners' practices result in uncertain diagnoses, particularly for first examinations, leading to over- and under-prescribing. Detailed microbiological laboratory tests can identify possible pathogens and provide information on their resistance profiles. However, this information is usually available after a several-day delay, often equal to the duration of a treatment unit with an antibiotic. For many prescription decisions, information on the probability of bacterial infection can be helpful in allowing informed decisions on whether or not treatment with antibiotics could be delayed until detailed test results are available or should be initiated immediately.

To predict bacterial causes using a random forest, the authors link the anonymized laboratory test results of patients with presumed urinary tract infections from the largest medical laboratory in Denmark to rich administrative data. The data include complete prescription and treatment histories, past hospital stays, laboratory results, and demographics such as age, gender, profession, municipality of residential address, household size and type, and marital status, among others. Comparing data-based predictions with physicians' prescription decisions, they propose policy rules that lead an improvement in antibiotic prescriptions based on a social objective function trading off the benefit of antibiotic treatment and the negative externality of an expected increase in antibiotic resistance.

The results show the potential for data-based predictions using machine learning methods. The available mass and complexity of data can be reduced to simple, useful information, thus contributing to resolving one of the major challenges of today's health care system: the efficient use of antibiotics given the trend of increasing resistance. To assess its full potential and assess potential risks, further testing of the proposed method in general practice in collaboration with domain experts is necessary.

The full paper ›Battling Antibiotic Resistance: Can Machine Learning Improve Prescribing?‹ is available as *DIW Discussion Paper* No. 1803.

Review: BCCP Conference and Policy Forum 2019

Focusing on regulatory challenges in digital markets, in particular the rise of corporate power, the fourth annual Conference and Policy Forum of the Berlin Centre for Consumer Policies (BCCP) was held in Berlin on June 21, 2019.

Touching upon an issue at the forefront of current European and US policy debates, more than 100 participants, including academics from law and economics, policy makers, professionals, BCCP Fellows, and the interested public came together at the Wissenschaftszentrum Berlin für Sozialforschung (WZB).

A remarkable body of economic research reports on the global rise of concentration and mark-ups across many markets and industries. The measurement of market power, the role of competition policy, and the potential need for regulatory intervention have moved into the spotlight, becoming core issues in current academic and policy discussions. The conference panelists and participants discussed the road ahead for improving institutions and markets to curb corporate power for the good of society.

Session Reviews

In the opening session, Jan Eeckhout (Universitat Pompeu Fabra Barcelona), Jonathan Baker (American University), and Fiona Scott Morton (Yale University) discussed the global rise of concentration, profits, mark-ups and market power across many markets and industries, the possible explanations for rising mark-ups and concentration along with the role of competition policy enforcement in protecting consumers from monopoly and market power. Jan Eeckhout argued that increasing market power results from combined changes in market structure and technology, thus helping to explain secular macro trends such as wage stagnation, the decline in the labor share, the decline in business dynamism, and the reallocation of sales towards high mark-up superstar firms. Jonathan Baker added that an additional explanation for growing market power is also relaxed antitrust enforcement, especially toward exclusionary conduct as well as courts' use of erroneous economic evidence. Especially in the digital economy, big data can be used as a tool for perfect price discrimination or as a barrier to entry. Fiona Scott Morton emphasized the role of market entry as one of the most effective policy tools to foster competition. Restoring competition must be the goal of any remedy imposed by antitrust agencies. Especially in the digital economy, rather than fines and divestitures, mandatory data interoperability could be a powerful tool to enable market entry. The three talks were followed by a vivid discussion moderated by Tomaso Duso (DIW Berlin and Technische Universität Berlin) on the role and goals of competition policy. The panelists agreed that the issue was not the lack of laws and tools but the lack of enforcement.

Panelists Jan Eeckhout (Universitat Pompeu Fabra), Jonathan Baker (American University), and Fiona Scott Morton (Yale University)
Photo: DIW Berlin/F. Schuh

In the first afternoon session, Matthew Gentzkow (Stanford University) and Helen Margetts (University of Oxford) presented their research on the political consequences of corporate power in digital markets. The panelists agreed that neither the size nor the power of platforms, such as Facebook, are a problem, per se. Matthew Gentzkow's research showed that segregation of content exposure across political camps online was similar as on traditional media and lower than in social context. However, this changed on social media platforms due to social filters, lower emphasis on sources and more exposure to niche content. Even though the structure of the personal social networks on social media platforms, like Facebook, leads to better-informed users in the first place, socially filtered content leads to stronger political polarization. Helen Margetts emphasized that while social media has increased political engagement, it has also led to larger political volatility. An institutional catch-up is needed to stabilize democracy. In the following discussion moderated by Daniela Stockmann (Hertie School of Governance), political segregation as one feature of social networks and the role of public pressure and data transparency to push changes were highlighted.

Panelists Matthew Gentzkow (Stanford University) and Helen Margetts (University of Oxford)
Photo: DIW Berlin/F. Schuh

In the closing policy roundtable about Consumer and Competition Policy in Times of Rising Corporate Power, panelists Amelia Fletcher (University of East Anglia and Centre for Competition Policy), Marit Hansen (State of Schleswig-Holstein), Stefan Hunt (UK Competition and Markets Authority), Paul Nemitz (European Commission), and moderator Hans Friederiszick (E.CA Economics) engaged in a lively discussion about the areas in which intervention by regulators could counter the rise of corporate power and political polarization.

Policy roundtable with Amelia Fletcher (University of East Anglia), Stefan Hunt (UK Competition and Markets Authority), Hans Friederiszick (E.CA Economics), Paul Nemitz (European Commission), and Marit Hansen (State of Schleswig-Holstein)
Photo: DIW Berlin/F. Schuh

Especially for online platforms, the (future) relevance of implementing data protection by default and design, as specified in the General Data Protection Regulation (GDPR), and of the development of rules for increased data mobility, were stressed.

European Research Council
Established by the European Commission

BCCP Director and Senior Fellow Özlem Bedre-Defolie awarded ERC Starting Grant

BCCP Director and Senior Fellow Özlem Bedre-Defolie
Photo: Peter Himsel

The European Research Council (ERC) has awarded a coveted Starting Grant to BCCP Director and Senior Fellow Özlem Bedre-Defolie, Associate Professor of Economics at the ESMT Berlin.
The grant, worth approximately 1.5 million Euros, will enable her to pursue her research project ›Digital Platforms: Pricing, Variety and Quality Provision‹ (DIPVAR) and build up her own research group over the next five years.

The project aims at developing new theoretical models of digital platforms, capturing the particular dynamics of these markets, which are not fully accounted for by existing research. Globally operating platforms, such as Amazon, Alibaba, and Google, mostly have very high market shares, which might harm consumers even if they provide valuable services often at zero price. Using the developed theoretical models, in a second step, DIPVAR wants to study the effects of dominant platforms' practices on prices, variety, and quality delivered to consumers as well as the consequences for smaller platforms. Based on the results, DIPVAR will then be able to make recommendations for effective competition policy and consumer protection in digital platform markets.

BCCP newsletters aim at presenting and discussing in accessible terms the main findings of scientific papers recently published by BCCP Fellows. Most of the news published in this issue can also be found on the BCCP website (http://www.bccp-berlin.de/news).

About BCCP

The Berlin Centre for Consumer Policies (BCCP) is a Leibniz ScienceCampus, established September 2015, and co-funded by the German Leibniz Association and its member institutions. Leibniz ScienceCampuses promote cooperation between Leibniz institutions and universities via regional, thematic research and policy partnerships.

The Centre builds on the cooperation between two Leibniz institutes – the German Institute for Economic Research (DIW Berlin) and the Berlin Social Science Center (WZB) - and faculties of the Humboldt-Universität zu Berlin, Technische Universität Berlin, the European School of Management and Technology (ESMT Berlin), the Hertie School, and the Alexander von Humboldt Institute for Internet and Society (HIIG).

A strong focus on Behavioral Economics, Industrial Organization, as well as Consumer and Competition Law - all combined with established policy expertise - makes Berlin an ideal location for a ScienceCampus focusing on consumer policies.

BCCP reinforces and institutionalizes this exceptional environment to create an enduring international platform in the broad area of competition and consumer policies. This platform strengthens the academic environment, encourages interdisciplinary research, and increases the visibility of Berlin as a center of excellent academic research and evidence-informed policy advice.

Imprint

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