



Dear participants and friends of the GSBC,

In this edition of the GSBC newsletter you will find information on the recent developments at the Graduate School "Human Behaviour in Social and Economic Change" (GSBC). The contents of this newsletter are as follows:

**Latest News
Announcements
Achievements**

LATEST NEWS

The Theo Schöller Award for Katja Rost



Since 2010 the Munich Best Paper Awards are granted for outstanding publications in high-ranking international journals that made a significant contribution to academic research in their respective fields. The Theo Schöller Award is granted for publications in the area of innovation management and is sponsored by the Theo und Friedl Schöller Stiftung ([info](#)).

This year, The Theo Schöller Award has been awarded to Katja Rost (Professor of Sociology, University Zurich) for her scientific article on "The strength of strong ties in the creation of innovation" published in Research Policy, 2011.

DFG funding for Franz Neyer

The "Panel Analysis of Intimate Relationships and Family Dynamics" ([pairfam](#)) was launched in 2008. The German Family Panel pairfam is a multi-disciplinary, longitudinal study for researching partnership and family dynamics in Germany. The German Family Panel is a cooperative effort linking the University of Bremen, the Chemnitz University of Technology, the Friedrich Schiller University of Jena, the University of Cologne, and the Ludwig Maximilian University of Munich. Since 2010, pairfam has been funded as long-term project by the German Research Foundation (DFG).



In the next two years, the DFG will support the research projects by Fran Neyer within the pairfam study. Franz Neyer and his research team will focus on the research topic on "personality and partnership".

Dissertation award for Katharina Eckartz (IMPRS)



Katharina Eckartz (IMPRS Uncertainty) was awarded the dissertation award of the University of Jena (sponsored by the "Gesellschaft der Freunde und Förderer der Universität Jena") for her dissertation "Information and incentives in principal-agent experiments".

The ceremony for the presentation of PhD awards and certificates took place as part of the Schillertag ([Schiller Day](#)) celebrations on 27 June 2014.

New Position for Katharina Eckartz

I have left my job as a GSBC-coordinator this spring. I would like to use the opportunity to thank you all for the nice time together in the GSBC and IMPRS Uncertainty.

As of September 2014, I will start my new job as a researcher at the Fraunhofer Institute for Systems and Innovation Research "ISI" in Karlsruhe where I will join the competence center "Sustainability and Infrastructure Systems". I am looking forward to my new task and at the same time I would be happy to maintain my contacts in Jena.



ANNOUNCEMENTS

Recent and Upcoming Lectures and Workshops

- April 22nd, 2013, lecture by Michael Fritsch at the Workshop "Zukunftsdiskurs Thüringen 2020" at the Thuringian Ministry for Economics, Labor and Technology, **Rahmenbedingungen für Innovation und Wachstum in Thüringen**, Erfurt, Germany.
- June 17th, 2014, lecture by Andreas Freytag at the ECONWATCH-Meeting, **"Internationale Freihandelsabkommen - Weg zu mehr Wohlstand weltweit?"**, Berlin, Germany.
- June 18th, 2014, lecture by Andreas Freytag at the Konrad Adenauer Stiftung, **"Economic Effects of the Transatlantic Trade and Investment Partnership (TTIP)"**, Berlin, Germany.
- July 11th, 2014, lecture by Michael Fritsch at the 3rd Summer School on Knowledge dynamics, industry evolution, economic development, **"Entrepreneurship and employment"**, Nice, France.

ACHIEVEMENTS

Completed Dissertations

- Brünner, Kathrin (Business Administration, under supervision of Holger Reinisch), Aufgabenspektrum und Handlungsstrukturen des betrieblichen Ausbildungspersonals. Selbstwahrnehmung und Fremdattribuierung im Kontext von Berufskonzept und Professionalisierung.
- Hassan, Sohaib Shahzad (GSBC-EIC, under supervision of Uwe Cantner and Peter Walgenbach), Outward FDI by the Emerging Market Multinationals: Location Choice Analyses in the European Union.
- Götzl, Mathias (Business Administration, under supervision of Holger Reinisch), Kaufmännische Berufserziehung im Antagonismus zwischen Berufs- und Allgemeinbildung. Zur Entwicklung und Bedeutung der Handelsschule der kaufmännischen Innungshalle zu Gotha (1817-1902).
- Papa, Javier (GSBC-EIC, under the supervision of Uwe Cantner and Giovanni Dosi), "What Does Not Kill You Makes You Stronger": The Unusual Case of Successful Late-comer Firms in Argentina.
- Schreiber, Raphaela (Business Administration, under supervision of Holger Reinisch), Berufliche Identitätsentwicklung im Rahmen prekärer Arbeitsverhältnisse und diskontinuierlicher Berufsbiografien - Eine Analyse am Beispiel der Zeitarbeit.
- Zenker, Martin (GK Global Financial Markets, under supervision of Andreas Freytag), The Dependence of Financial Markets regarding External Sources of Information - The Role of the Stability & Growth Pact and Credit Rating Agencies.

We congratulate them and wish them all the best for their future careers.

Conference presentations by the GSBC fellows

Silke Übelmesser on „Student and Graduate Migration and its Effect on the Financing of Higher Education“ (with Tina Haußen)

CESifo Area Conference on Public Sector Economics, April 2014, Munich, Germany

The number of tertiary students enrolled outside their home country has almost doubled in the last decade. In higher education systems that are partly tax-funded, a country's labor force might not be willing to subsidize the education of foreign students who can be expected to work abroad after graduation with high probability. This paper analyzes whether and how student mobility affects the governmental decision about the financial regime of higher education based on aggregated data of 22 OECD countries for the period 2001 to 2010. We find a small but significant positive correlation. Supported by robustness checks, this points into the direction that the larger the share of foreign students among all students in a country, the more a country shifts to private-based funding. We also study other possible determinants. Among others we find that the private financing share of higher education funding depends on a country's tax revenue, the share of students enrolled in private universities and the party composition of parliament.

Michael Fritsch and Michael Wyrwich on "The Effect of Regional Entrepreneurship Culture on Economic Development—Evidence for Germany"

Economic History Workshop at University of Warwick, April 2014, United Kingdom; 2nd International Conference on the Dynamics of Entrepreneurship Center for European Economic Research (ZEW), May 2014, Mannheim, Germany; 5th IZA Workshop on Entrepreneurship Research, July 2014, Potsdam, Germany; and 15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

We use the historical self-employment rate as an indicator of a regional culture of entrepreneurship and link this measure to economic growth in recent periods. The results indicate that German regions with a high level of entrepreneurship in the mid-1920s have higher start-up rates about 80 years later. Furthermore, we find that the effect of current start-up activity on regional employment is significantly higher in regions with a pronounced entrepreneurial culture. We conclude that a regional culture of entrepreneurship is an important resource for regional growth.

Uwe Cantner, on "Schumpeter's Entrepreneur – Psychological, Sociological and Economic Dimensions" (with Maximilian Göthner and Rainer Silbereisen)

Workshop on SCHUMPETER AND SCHUMPETERIANS ON ECONOMIC POLICY ISSUES - 80 years after the publication of the Theory of Economic Development (1934), May 2014
Université de Picardie – Jules Vernes, Amiens, France

Based on data from the Thuringian Founder Study we use various psychological constructs of the BigFive as well as of the Theory of Planned Behavior to analyze the intentions of scientists to spin off and found their own firm. The results allow us to distinguish between different types of entrepreneurs among which the Schumpeter entrepreneur being characterized as acting "against the odds" is a rare case. Scientist entrepreneurs rely mainly on others and follow their peers.

Tina Haußen on "Is there a gender gap in preferences for public spending? institutional changes"

11th Workshop on Social Economy for Young Economists, June 2014, Bologna, Italy

In several empirical contributions researchers have found a gender gap in preferences for public spending. This paper analyzes the persistence of the gender gap when income differences between individuals are taken into consideration. Using data from the International Social Survey Programme for the years 1996 and 2006 for Germany, we show that the gender gap in preferences vanishes when we control for individual income relative to the German median income. The larger this income ratio, the lower the preferences for social security (health care, retirement and unemployment) but the larger the preferences for education spending independent of gender. Controlling for pseudo individual income (available income per person if total household income is shared among all household members), the gender gap in health care and retirement reappears. This may reflect an insurance motive of women who fear to lose the benefits from the within household transfers.

Chad M. Baum on "How where I shop influences what I buy: the importance of the retail format in organic and ethical consumption" (with Robert Weigelt)

28th International Conference of Applied Psychology (ICAP): from crisis to sustainable well-being, July 2014, Paris, France

The increasing prominence of ethical and environmental attributes has dominated discussions of the changing patterns of food consumer behavior. Notably, it is established that there is substantial preference heterogeneity in the food industry due to these attributes not being equally important for all consumers. Consequently, one of the most frequently utilized methods to make sense of this heterogeneity is the family of contingent valuation methods that disentangles products into a set of characteristics. As one example, the use of discrete choice experiments presents consumers with a choice between products composed of distinct sets of attributes. Regarding organic and ethical consumption, this method has been able to derive estimates of the differential willingness to pay (WTP) of the use of labels to indicate organic production, ethical considerations, as well as local provenance. However, given the potential interaction between the type of retail format and perceptions of the product quality claims, the absence of considerations of retail format represents a major gap in the literature. This study therefore utilizes a hypothetical discrete-choice experiment with opt-out option to explore how the importance of such labels for the product of tomatoes is affected by including the retail format. In specific, this experiment focuses on three types of retail formats (discounters, supermarkets, and independent organic retailers) to better understand how aspects of where people shop influence what they purchase. Furthermore, in order to provide a more realistic choice setting, this is the first study in the literature to utilize an individual-specific status quo that allows the answers of participants regarding their typical consumption pattern to always be reflected as one of the potential choices. This model therefore takes steps to ensure that the coefficient estimates obtained, as well as the resulting WTP values, better capture the underlying preference heterogeneity of individuals as well as the particular role played by the type of retail format.

Michael Wyrwich on "The Persistence of Spatial Differences in Female Labor Supply"

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany; and 54th ERSA Congress, August 2014, Saint Petersburg, Russia

One of the main trends in the labor market over the last decades is the increasing labor market participation of women. This study analyzes the spatial distribution of female labor supply and its origin by making use of an extensive German historical census data set. This data has information on labor market participation of all German men and women in 1925 (incl. information on industry and occupation). It can be vividly shown that regions where female labor market participation was already comparatively high in the mid-1920s also have a high level of female labor supply today despite controlling for regional differences in industry structure. The results reveal a remarkable persistence across German regions despite radical shocks in the institutional framework conditions and massive structural distortions (e.g., World War Two).

Ivan Savin on "Which Firms Benefit from Complementarity Effect in R&D the Most?: Evidence from Germany" (with Uwe Cantner)

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

This paper contributes to the literature on the complementarity of innovation strategies by concentrating on the complementarity effect from the side of the capital with embodied technology acquired by firms distinguishing between different types of firms (according to the Pavitt's sectoral taxonomy) and between different types of innovations, which allows for more detailed analysis. We use a two-step approach using representative data drawn for Germany from the Community Innovation Survey (CIS) in 2005 and 2007. The empirical strategy of the paper is divided in two steps. In the first step, the adoption approach offers a test for complementarities between internal R&D and external equipment with embodied technology, which implies a positive correlation between the adoption of the activities. In the second step, the productivity approach, which is a direct test for super-modularity through the regressions of innovation performances, measures whether the effect of the combination strategy significantly outperforms the effects of any single knowledge source. Whereas we find complementarity in the first step, in the second on complementarity is nearly absent.

Diego d'Andria on "The relationship between R&D intensity and profit-sharing pay: evidence from Europe" (with Silke Uebelmesser)

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

We study the determinants of the use of profit sharing schemes (PSS) by private European companies. U.S.-based studies report a positive correlation between the likelihood to offer PSS to employees, and the R&D intensity of a firm. We inquire whether this also holds in European countries by exploiting two datasets for Germany and the United Kingdom. Our results replicate the U.S.-based findings and suggest that pursuing some R&D activity is strongly associated with offering PSS to employees. For the German dataset we run Granger-causality tests and show that this correlation exists within each period. We exclude that past innovation or past use of PSS may drive the results. We also test for a number of other determinants of PSS use. Exploiting a Europe-wide dataset we find evidence that European firms have multiple motives to use PSS: to provide incentives to

perform and to innovate, and to attract and retain qualified staff. We find that a firm's dimension measured by its turnover is always a strong positive predictor of PSS use, and that the positive correlation found in other studies between the size of the workforce and PSS use might be spurious. The age since foundation of a firm, and its organizational characteristics produce tentative but statistically insignificant results.

Susanne Hinzmann on "Interdisciplinary, R&D-Policy and Innovation"

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

The capability to continuously innovative determines firm survival and economic development (Haagedorn 2002). In order to remain innovative, actors are required to continuously generate and access new and diverse knowledge. Previous work has emphasized the benefits of (knowledge) boundary crossing activities and collaborative R&D for innovation and inventor performance (March 1991, Goossen 2013). Interdisciplinary collaborations as discipline crossing activities might produce more radical ideas as they represent a platform for optimizing the tradeoff between specialization - the accumulation of knowledge - and diversity - the broadening of knowledge. While the positive association between interdisciplinarity and innovation is evident from theoretical argumentation, this assumption has rarely been tested empirically (Blackwell et al. 2009). Furthermore, actors might be disinclined to engage in interdisciplinary research by the uncertainty involved and the additional costs of communication. On this account policy plays an important role in setting incentives by compensating for the higher costs and connecting actors from different disciplines. To our knowledge, no empirical study has yet empirically analyzed the role of policy in fostering the interdisciplinarity of research projects and the resulting effects on innovation. This study takes a first step in this direction by providing empirical evidence on the question whether innovation policy is indeed supporting interdisciplinary research projects and whether this pays off in a superior performance. Using data on publications from the medical devices domain gathered from the Web of Science, we explore the interdisciplinarity character of funded and non-funded projects and seek to understand if they come with a superior performance. Our first results support our hypotheses in that interdisciplinary research projects tend to produce higher impact publications than disciplinary research. Moreover, scientists are more prone to engage in interdisciplinary research when they receive financial support.

Alexia Gaudeul on "Exit Costs and Motivations for Leaving in Repeated Partnerships with Imperfect Public Monitoring" (with Paolo Crosetto and Gerhard Rie-ner)

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

We look into the frequency of exit from collaborative work and its motivations. We consider a repeated public good game with stochastic outcomes. Subjects independently choose each period between team and individual work. We vary the cost of exit across treatments. We observe that exit is driven by both the difference in expected payoff between the two options and by whether team work was successful last period. Success is rewarded by staying in the team and failure is punished by leaving. However, most exit is final and return does not lead to higher effort. This pattern leads to excessive exit because subjects also underestimate the pay-off from staying. As hypothesized, lower exit costs led subjects to be more sensitive to payoff comparisons across individual and team work.

Stefanie Picard on "KIBS as Knowledge Providers – a Sectoral Perspective" (with Maximilian Göthner)

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

With our paper we add to the research on KIBS-client relationships and explore the usage of KIBS in the innovation process. In particular, we investigate who the clients of KIBS are and examine the factors that shape the propensity of firms to draw from KIBS in their innovative activities. Our analysis is done in the background of sectoral patterns, using Castellacci's taxonomy (2008). Further, we consider the effect of openness and distinguish between external science and market sources. Our analysis employs firm-level data from the German part of the Community Innovation Survey 2009. More than half of the observed firms indicate that they used KIBS as source of information in their innovation activity. KIBS are most often used by firms belonging to the 'supporting infrastructure services' and 'mass production goods' sectors. Our results show that the 'breadth of openness' for market as well as for science sources indeed matters. Firms with broader search strategies are more likely to draw from KIBS. Examining the relationship between sourcing from KIBS and internal R&D (using R&D intensity) we find no evidence to support the complementary hypothesis.

Stefan Töpfer on "Structural Dynamics of Innovation Networks in German Leading-Edge Clusters" (with Uwe Cantner and Holger Graf)

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

We employ social network analysis to study the influence of cluster policies on interaction structures. More specifically, we analyse the extent of policy influence on the networks of most important cooperation partners, their geographic reach, and the changes of network structures as well as their determinants. Our empirical analysis is based on original data that was collected in fall 2011 and late summer 2013 with cluster actors (firms and public research) who received government funding. Preliminary results show that over time the program was quite effective in initiating new cooperations between cluster actors and in intensifying existing linkages. These newly formed linkages are a substantial amount among actors who did not receive direct funding for a joint R&D project, which indicates an additional, mobilising effect of the policy.

Ipsita Roy on "Role of Human Resource Practices in Absorptive Capacity and Inter-Firm Cooperation"

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

As market competition becomes more knowledge-based, a firm must develop a thorough understanding of its own knowledge, the processes by which it converts knowledge to capabilities, and the capacity of those capabilities to meet the demands of its environment" (Lane and Lubatkin 1998). Building on these arguments, the paper claims that a major drawback in the working definition of human capital-related absorptive capacity arises on account of its unidimensionality. Given this, it is important to consider not only traditional human capital measures of absorptive capacity (educational level of workforce, share of employees trained), but also the role of human resource management (Huselid 1995; Ichniowski et al. 1999) in explaining the mechanism of knowledge-building in firms. Two broad indicators of human resource management viz. employment practices and compensation schemes are constructed and then related to firms'

knowledge management activities, probability of forming external R&D cooperation and innovation performance. The empirical analysis is based on three waves of the IAB Establishment Panel Database (2007, 2009 and 2011) for about 1200 innovation firms in Germany. Results confirm the theoretical arguments that internally adopted human resource management practices constitute an important component of firms' absorptive capacity and have significant impacts on their R&D cooperation strategies. However, significant differences in the importance of human resource management are found between horizontal and vertical R&D cooperation, as well as between manufacturing and service firms. Finally, direct and moderating effects of human resource practices (compensation schemes) are found only with regard to radical innovation output.

Zahra Lotfi on "Pay-for-Performance for Executives and Innovation Activities in Firms" (with Katja Rost)

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

This paper examines the effects of pay for performance for top managers on innovation activities in firms. Executive pay gets linked to firm performance to encourage managers to operate in alignment with shareholder interests. With regard to innovation, it is not clear whether pay for performance encourages innovation or not. Innovation is inevitably linked to risk taking and to the long-term commitment to a firm's resources. One of the critical factors to foster innovation in firms is a high amount of intrinsic motivation, autonomy and freedom. Experimental research shows that tangible rewards, such as pay for performance, are likely to be perceived as controlling and thus likely to undermine such intrinsic motivation, autonomy and freedom. Furthermore, variable pay programs mostly focus on short-term measurements of performance such as stock performance or turnover; this leads to the fact that individuals usually do not have incentives to focus on long-term measurements of performance like innovation. Therefore we expect negative effects of short and long term incentive pay for top managers on the innovation activities within firms. Using a sample of 1,240 US firms from manufacturing industries, we find that variable pay for CEOs and top executives indeed creates disincentives to allocate firms' resources to patent activities and radical innovations. Pay-for-performance however simultaneously encourage executives to engage in incremental innovation activities like increasing the expenses in research and development.

Johannes Herrmann on "The Evolution of the Electricity Market in Germany – Identifying Policy Implications by an Agent-Based Model" (with Ivan Savin)

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

The diffusion of renewable electricity generating technologies (REGT) is widely seen as a crucial part for establishing a sustainable energy system in the future. For this reason, many countries have recently implemented different policy instruments to support innovation in and diffusion of renewable electricity generating.

We employ an agent-based simulation model (ABM) to model this out-equilibrium-process. The model is designed in a history-friendly manner and attempts to reproduce some stylised facts from the development in countries with strong support schemes, such as Germany. In particular, two connected markets, the market for electricity and a market for electricity generation equipment, are modeled. Electricity consumers may decide to become electricity producers themselves, if there is insufficient supply of electricity generated by REGT in the electricity market or if they are encouraged by policy support. REGTs, fossil and storage technologies can benefit from learning effects and innovation.

The policy makers are assumed to have an interest in supporting the diffusion of REGT and to raise the share of electricity consumed generated from them. They can influence the development of both markets with different policy instruments. The costs for these policy instruments are laid upon the electricity price of grid-based electricity.

In this paper, we aim to compare possible policy instruments and analyse under which policy mixes the transition process can be achieved with lowest costs and risk (of an electricity grid break-down). In addition, we analyse how and when the policy makers can react to emerging developments by changing their policy instruments.

Muhammad Ali on "Trade, FDI, Absorptive Capacity and Knowledge Spillovers" (with Uwe Cantner and Ipsita Roy)

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

In order to analyze the role of international knowledge spillovers in explaining domestic productivity growth we concentrate on international trade via exports and foreign direct investment as the most important channels for technology spillover. While trade in intermediate capital goods has been found to contribute significantly to knowledge spillover across borders, prior studies have found systematic differences in magnitudes of trade-related R&D spillovers across countries. As compared to international trade, FDI as a spillover channel has received relatively less attention. In discussing the effects of FDI we consider that not only does FDI result in diffusion of new technologies in the domestic market, but it also enhances the ability of the country to absorb potential spillover-benefits related to FDI. Therefore, in order to understand fully the inter-relationship between technological spillovers, FDI, trade and domestic productivity, we account for the role of human capital and internal R&D efforts in the absorption of international knowledge spillovers.

Martin Kalthaus on "The Policy Mix's Influence on Inventor Networks in Renewable Energies" (with Uwe Cantner, Holger Graf and Johannes Herrmann)

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

This paper aims at understanding how different policies in the instrument mix influence changes within the photovoltaic (PV) and wind power (WP) technologies in general and in the underlying innovation systems in particular. These networks are analyzed by using social network analysis allowing to account for growth and changes in the structure of those networks over time. In a regression framework we estimate the influence of the instrument mix on the changes in the network structure from 1985 until 2011. Results indicate that an increase in supply side funding has positive effect both on the network size and the connectivity among the actors in the network, while an increase in the share of funding of collaborative research projects only increases connectivity among the actors in the network, but has no effect on network size. The specific demand side instruments show negative effects on connectivity, but have a positive or insignificant (depending on the measure of network size chosen) effect on network size.

Javier Papa on "Strategic Maneuver to Catch-up – the (Un)usual Case of a Latecomer Firm"

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

This article explores why and how a latecomer firm that faces adverse economic conditions might still be able to survive, grow, and catch up with global competitors, while other domestic firms lag behind. Drawing mostly on the theoretical contributions of Gerschenkron (1962) on latecomer development and Nelson (1991) on evolutionary economics, we conduct a detailed case study of an unusually successful firm from Argentina over the past 40 years. The research indicates that a long-term corporate strategy, a flexible organizational structure, and a coherent set of technological and organizational capabilities are critical elements to turn latecomer disadvantages into catch-up opportunities. The article concludes with implications for theory, policy, and corporate strategy.

Igor Asanov on "Short- and Long-term Effects of External Interventions on Trust" (with Simone Vannuccini)

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

We experimentally analyze the effects that external interventions such as subsidies and the targeting have on the investment decisions, both while the intervention is in progress as well as after it has been concluded. We employ a multi-period version of the trust (investment) game (Berg et al., 1995) introducing either monetary incentives for a contribution or a suggestion about the level of investment. The results of the experiment indicate that targeting is an effective instrument to promote trustful behavior, whereas the use of subsidies does not prove to be effective neither in the short- nor in the long-run. Therefore, we suggest considering targeting policy as a policy instrument that can foster trustful behavior.

Fernanda Puppato on "Pattern of Industrial Development in Latin America – the Link Between Structural Change and Wage Inequality" (with Uwe Cantner)

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

This paper aims at studying the pattern of industrial development through structural change dynamics, associated with productivity changes in the LA manufacturing sector and their impact on cross-sectoral wage distribution.

Via a decomposition of productivity change we first capture various productivity effects on sector development. The direction of such change is determined in a second step by calculating the weight of R&D sectors added value in proportion to the total added value. A third step focusses on industrial inequality by examining the distribution of wages at a sectoral level measured through the Theil coefficient. A final step addresses the relationship between structural change and wage inequality through a panel analysis where we also control for the role of labour market institutions.

Josefine Diekhof on "Do Entrants Increase Incumbents' R&D Activity – Escaping the Lock-In, Spurring Technological Change and the Transition towards Sustainability within the Automotive Industry" (with Uwe Cantner)

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

In this paper we look at the pace of the transition towards environmentally friendly technologies in the automotive sector. This process is likely to be hampered by incumbents' potentially controversial intensions whilst entrants suffer from high entry and survival barriers although they may embody a catalyzing function.

Using patent data, this study seeks to empirically estimate whether ATV related R&D entrants stimulate incumbents' R&D on ATVs. Following previous findings, incumbents are expected to respond heterogeneously depending on their R&D productivity level. Extending current literature, the analysis accounts for cross-country entrants, product-level effects and seeks to shed light on the effects imposed not only by quantitative but also by qualitative entry forces; entrants' absolute number in contrast to knowledge stock and technological relevancy. Preliminary results support the postulated hypotheses: incumbents' positive and heterogeneous responses, a stronger reaction on qualitative as opposed to quantitative entry forces and also a stronger reaction on entrants with greater as opposed to minor technological relevancy.

Diego d'Andria on "Motivating Innovation with Tax Incentives – an Agent-Based Approach" (with Ivan Savin)

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

In the past decades the role of innovation in economic growth, and also the role of profit sharing schemes (PSS) as a means to foster innovation in a principal-agent context, have been widely acknowledged and studied. However, surprisingly little has been done to analyze the interactions between tax policy, PSS and innovative activity, not least because of severe data limitations. In this study we propose an agent-based model to explore the effects of two distinct tax policies on innovation in a pure knowledge economy: a "patent box" incentive and a tax incentive on compensation earned by agents as profit sharing schemes. Agents are heterogeneous with respect to skill, they can be risk-averse, and can choose a principal, a type of job task (standard or innovative) and the amount of effort to invest into the task chosen. Principals can have different technological capabilities, are information-constrained in that they cannot observe skill, effort, or (ex ante) agents' choice of task, and they set compensation contracts in order to attract agents and provide them with incentives to perform. Furthermore, principals can learn from past innovations, thus becoming more productive. We compare the two tax incentives to foster innovative activity under several distinct specifications and find the tax incentive on PSS to be more efficient.

Martin Kalthaus on "Knowledge Recombination and Inventor Characteristics in Renewable Energy Technologies"

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

This paper is concerned with the relationship between the value of inventions on a new technological trajectory and the competencies and knowledge of inventors as well as their cooperation behind them. In the analysis a distinction is made between actors (single or teams) experienced in technologies closely related to the new technology, experi-

enced in unrelated technologies, and neither experienced in related and unrelated technologies. We use patent data for wind power and photovoltaic technologies for the period from 1980 until 2005 to elaborate on the inventor's characteristics and we use forward citations a patent received as an indicator for its importance in the specific technological field. In lines with previous findings that teams of inventors are more effective than single inventors, we expect that the number of inventors who invented a patent has a positive effect on its technological value. Accounting for the diversity of inventive teams, we hypothesize that a higher share of inventors with related and unrelated previous knowledge has a positive impact, while the ones with related knowledge have a stronger effect. Furthermore, we hypothesize that the extent of previous knowledge shows a positive impact which is supposed to be higher for inventors with related knowledge. Also the breadth of the inventor's previous knowledge is assumed to have a positive effect on the patent's technological value. Finally, the relationship between the inventor's knowledge A and the knowledge related to the technological field B is assumed to follow an inverted-U relationship, indicating that A and B should not be too similar and not too distant.

Tina Wolf on "Cluster Ambidexterity towards Exploration and Exploitation – Strategies and Cluster Management" (with Uwe Cantner, Holger Graf and Michael Rothgang)

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

In this paper we look at the phenomenon of ambidexterity in innovation clusters and analyze how a cluster management can foster a cluster's ambidexterity by providing services that facilitate the R&D activities of cluster actors (firms). Our analysis is based on questionnaire data which has been collected between 2011 and 2012 from 10 cluster managements and their respective cluster firms of the first two rounds of the German Leading Edge Cluster Competition. 229 companies answered questions with regards to their research strategy as well as to the need of services they have. Additionally, the cluster management organizations were asked about their prioritization of different kinds of services they could offer to the cluster actors. Preliminary results show that the companies' strategies with respect to exploration, exploitation and ambidexterity explain a need of different kinds of services offered by the cluster management. Taking in a next step the fitted value out of this regression, we can take the probability to have a need depending on the characteristics of the firms into account and try to explain the cluster management's prioritization of these services. It comes out that indeed, the activities of the cluster management can be explained by the firm's needs. Therefore, we might argue that we find the cluster management to be a service provider who is helping the cluster companies to become ambidextrous which in turn makes the cluster as a whole ambidextrous.

Uwe Cantner and Thomas Grebel on "Interdisciplinarity _ Who Reaps the Benefits?"

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

Who reaps the benefits from doing interdisciplinary research? Using data of a survey on German researchers in medical clinics and institutes, we investigate the determinants of research success measured by publication. We control for hierarchy, type of institute, freedom to research. Running negative binomial regressions, the results suggest that interdisciplinary research is beneficial for researchers on the executive level at institutes

with little patient care. On lower hierarchical levels, interdisciplinary research inhibits the propensity to publish.

Kamira Muriel Sanchez on "Attitude of Civil Servants Towards the Adoption of a New Integrated Financial Management System (IFMS)"

Poster presentation at the 15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

Studies that consider job-related variables to predict the pre-implementation acceptance of mandated information technologies (IT) are largely missing. This paper seeks to contribute to the literature by: (i) focusing on the public sector, where research on IS innovation has been scarce, (ii) using a mandatory rather than a voluntary setting, such as the adoption of a new Integrated Financial Management System (IFMS) and (iii) including job-related variables to predict the attitude of civil servants towards the innovation. The data for this research was collected in the Republic of Panama, which is one of the fastest growing countries in Latin America. A unique data set on the attitudes, demographics and job related variables of 228 civil servants in 24 public institutions in the Republic of Panama was used to test empirically whether a relationship between job-related variables and the attitude of civil servants towards the innovation exists.

This study found direct and significant relationships between job-related variables and the attitude of civil servants towards the innovation. Job tenure and hierarchical position have a positive effect while job satisfaction and salary have a negative effect on the attitude towards the IT. These results allow a better understanding of the factors that might influence the pre-implementation acceptance of a non-voluntary IT innovation in the public sector and provide support for the inclusion of these variables in the user acceptance literature.

Elsie Onsongo on "Animal Spirits, the Venture Capital Market and Innovation" (with Diego d'Andria and Ivan Savin)

Poster presentation at the 15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

The venture capital (VC) industry is marked by booms and busts. Anecdotal evidence on VC industry volatility shows that market returns, capital commitments, availability of projects and investment intensity are interrelated. However, the mechanisms through which they interact, and through which their cycles are induced and persist are yet to be clearly explained. Using an agent-based model, this study explores these dynamics in order to identify the conditions under which VC market cycles arise. We explore how overreaction, captured as herding behaviour or 'animal spirits', augments volatility in the VC market, and also explore the effect of technological discoveries and specific policy shocks on the VC market cycles. We further investigate the feedback mechanisms between the VC market and the macro-economic environment consisting of the financial market and the real sector. The model generates endogenous waves in market return that are transmitted to investment intensity and reflected back in the opinion dynamics. We expect the dynamics in the VC market to affect the speed and shape of the macroeconomic business cycles. Under specific parameterizations or as a consequence of one-time events, VC dynamics could be observed to lead to bubble-burst dynamics in the general economy.

Abdolreza Momeni on "Forecasting Disruptive Technologies by Patent Development Paths and Topic Modelling" (with Katja Rost)

Poster presentation at the 15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany

Disruptive technologies are a highly discontinuous or revolutionary type of innovation. Industry leaders often rely on obsolete technologies based on their sustainability while other companies take the opportunity to produce disruptive innovations and consequently become the new industry leaders. Unfortunately, this lack of focus on a new technology can create serious deficiencies in managers' decisions about firms' current and future technology and product portfolio. For example, the case of Kodak lends support to this point.

Technological forecasting is widely used for predicting next changes. Such predictions help managers and decision makers to prevent organizational failure. This study suggests a method based on patent citation analysis, K-core analysis and topic modeling which can be used for technological forecasting and here in particular the forecasting of disruptive technological change. Patents and patent citations show the complexity of the engineering side of technological changes and provide an opportunity for an *ex post* perspective on forecasting technological changes. K-core analysis and topic modeling are a complementary method, help to cluster and to understand the outputs of patent citation analysis and provide an opportunity for an *ex ante* perspective on forecasting technological changes. We apply the method to the photovoltaic industry and identify three technologies that have the potential to become disruptive technologies. The results show that the photovoltaic industry is currently facing a transition from silicon based material to organic material. In particular thin film has grown fast and independently that may destroy the current dominant technology of crystalline silicon.

Javier Changoluisa "The Effect of Regional New Business Formation on the Productivity of Manufacturing Incumbents" (with Michael Fritsch)

27th ERSA Summer School at the Adam Mickiewicz University, July 2014, Poznan, Poland; 15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany; and 54th ERSA Congress, August 2014, Saint Petersburg, Russia

While previous studies have tested the hypothesis of a reaction of incumbents to the threat of advanced, challenging entry, we focus on a rather underestimated form of new competition, namely, the one imposed by regular start-ups entering in the same industry and locating in the same region of manufacturing incumbents. We obtained robust empirical evidence to claim that regular start-ups have a positive average effect on the productivity change of manufacturing incumbents. More importantly, the main finding of our paper is that unlikely advanced entry, regular start-ups do not seem to harm incumbents away from the frontier but rather make them stronger.

Sandra Kublina "Entrepreneurship, Growth, Regional Growth Regimes" (with Michael Fritsch)

27th ERSA Summer School at the Adam Mickiewicz University, July 2014, Poznan, Poland; 15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany; and 54th ERSA Congress, August 2014, Saint Petersburg, Russia

We distinguish four types of regional growth regimes according to the relationship between new business formation and economic development. The distinguishing character-

istics of these regime types are analyzed in order to identify the reasons behind the different growth performance. Although there is a high degree of persistence of these growth regimes over time, typical transition patterns between the regime types can be identified. We try to explain these patterns and draw conclusions for policy. The evidence clearly suggests that entrepreneurship is a key driver of economic development that has rather long-run effects.

Michael Fritsch on "Types of Higher Education Institutions, Fields of Knowledge and Innovative Start-ups – An Empirical Investigation" (with Ronney Aamoucke)

54th ERSA Congress, August 2014, Saint Petersburg, Russia

We investigate the role played by different fields of academic knowledge and various types of higher education institutions in the emergence of innovative start-ups in a region. We show that education and research in the applied and natural sciences have the strongest effect on the emergence of new businesses in innovative industries. Distinguishing between different indicators for these types of knowledge, the strongest effects are found for the number of professors, followed by the number of students and the amount of external funds attracted. This discovery clearly indicates that it is more the size of the regional knowledge stock than the number of students that is most important for the emergence of innovative start-ups.

Alina Sorgner on "Regional Transitions from Socialism to Entrepreneurship: Russia and Germany compared" (with Michael Fritsch, Michael Wyrwich, Evgenii Zazdravnykh)

54th ERSA Congress, August 2014, Saint Petersburg, Russia

We investigate the personal- and regional-level determinants of entrepreneurial activities in East Germany and Russia in the process of transition to a market-type economy. In this comparison entrepreneurship in West Germany is used as a benchmark. Whereas East Germany has experienced – after 40 years of socialism – a shock-like-transformation towards a market economy, Russia was under socialistic regime for a period of about 70 years, and its economic development after the breakdown of the Soviet Union diverged from the development in East Germany. Hence, one can expect substantial differences in the individual determinants of the decision to be self-employed in these two countries and their regions. While a number of studies indicate that East Germany has now largely overcome its socialistic legacy with regard to entrepreneurial activities (see, e.g., Fritsch, Bublitz, Sorgner, and Wyrwich, 2013; Fritsch, Kritikos, and Sorgner, 2013), the developments in Russia are still largely unclear. The aim of the study is, hence, to add to the evidence on the dynamics of entrepreneurship in post-socialist countries.

Michael Wyrwich and Maximilian Göthner on "Higher education institutions and the emergence of entrepreneurial ideas across regions"

15th International Conference of the International Joseph A. Schumpeter Society (ISS), July 2014, Jena, Germany; 54th ERSA Congress, August 2014, Saint Petersburg, Russia

Over the past decades, the promotion of entrepreneurial activity has started to be considered a third mission in which higher education institutions (HEI) engage. Our study examines the extent to which the emergence of entrepreneurial ideas is driven by the structure of HEIs. We use a rich dataset that links information on business start-up

grants awarded to entrepreneurial projects from German HEIs between 2007 and 2012 with extensive data on structural characteristics of these HEIs (e.g., number of academic staff, students, and third-party funding per faculty). We find that most of the awarded start-up projects emerged from natural sciences, ICT and engineering sciences. Moreover, the number of grants awarded to a university faculty is determined not only by the faculty's own structural characteristics. There also seem to be cross-faculty effects, suggesting potential knowledge spillovers within universities. Thus, our work adds a new perspective to the knowledge spillover theory of entrepreneurship.

Alina Sorgner on "Do Entrepreneurs really earn less?" (with Michael Fritsch and Alexander Kritikos)

VfS-Jahrestagung 2014: „Evidenzbasierte Wirtschaftspolitik“, Helmut-Schmidt-University / Universität der Bundeswehr, September 2014, Hamburg, Germany

Based on representative micro data for Germany, we compare the income of self-employed persons with the income of dependently employed individuals. Our results show that self-employed with employees tend to earn significantly higher incomes than their salaried counterparts, while the income of solo self-employed tends to be significantly lower than that of comparable employees – an exception being the solo-entrepreneurs without vocational degree. Comparing the earnings of founders before and after start up, we find that, on average, they are able to improve their earnings within the first three years in self-employment.

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Best Wishes,



Uwe Cantner (Director)