

Winterseminar 2020

Organized by the German speaking section (GfR) of the
European Regional Science Association (ERSA)
in Matrei in Osttirol, 16-21 February 2020

List of Abstracts

Blien, Uwe: *“Rebound”-effects in the technological and ecological transformation of regional economies*

Abstract: In energy economics rebound effects are known. If an energy saving device is introduced, the net energy effect is often smaller than expected, because of these effects. If a smaller budget is required for illumination due to new lamps the consumers might increase their demand and the energy spent might be not reduced as it was originally calculated. In a similar way, a technological innovation might not substitute as many workers as originally thought, because higher productivity might be used to sell products at a lower price. This increases the demand for the product and the demand for workers too. In the paper some theoretical considerations are presented which show that rebound effects are based on similar mechanisms in the technological and ecological transformation. Additionally some empirical results on the development of regional economies are shown. The regional variation is due the variation in the specialisation of regions.

Bzhalava, Levan (together with Jari Kaivo-oja, Sohaib S. Hassan and Steffen Roth): *Identifying Competitive Sectors and Entrepreneurial Activities for Smart Specialization by Text Mining and Network Analysis*

Abstract: The European Union (EU) has introduced Smart Specialization Strategy (S3) to stimulate the innovation potential of its member states by inducing them to discover and develop their competitive advantages, but regional and national authorities lack viable metrics and tools to identify economic activities for smart specialization and to fully operationalize S3. To address this issue, we analyse sector categories and business description of start-up entrepreneurs from Nordic and Baltic countries and use new metrics to measure competitiveness of sectors and entrepreneurial activities based on text data. Specifically, by combining techniques of text mining and network analysis, we compute sector competitiveness based on quantity and diversity of start-up entrepreneurs it produces. Then, we cluster keywords from the business description of start-ups operating in most competitive sectors by using word co-occurrence and component detection methods. The result shows priority business areas in which start-up entrepreneurs identify opportunities for investment and specialization across Nordic and Baltic countries. This paper is first attempt to measure strengths and weaknesses of entrepreneurial activities across countries based on automatic extraction of information from text. The study also shows the applications of text mining and network analysis for automating S3 processes.

Falk, Martin (together with Eva Hagsten): *Impact of high-speed broadband supply on local economic activity*

Abstract: High speed broadband supply differs markedly across Swedish municipalities. In 2017, the largest proportion of workplaces with fast internet (Access to fixed broadband of at least 100 Mbit/second (actual speed)) is observed in the largest cities and their suburbs

(Stockholm, 92 per cent, Malmö 78 per cent and Göteborg 75 per cent). Overall, the proportion of workplaces having access to high speed internet increased from 32 to 70 percent on average between 2010 and 2017. However, high speed broadband coverage remains problematic in rural areas with less than 10 per cent (e.g. Hörby, Malung-Sälen, Hylte, Valdemarsvik, Markaryd, Vansbro, Skurup). These municipalities belong to the special support zones. The aim of this study is to investigate the impact of high-speed internet supply on economic and employment and number of establishments by size class at the municipality level for Sweden. Several methods such as standard fixed effects, panel quantile regressions and the generalised propensity score function are employed to estimate the impact on the number of workplaces and number of employees by size class. One estimation problem is that a reverse causality is likely: firms and regions that are likely to get a higher return from using broadband Internet technology probably also are more likely to adopt this technology. This is due either to increased efforts to acquire broadband technology or to the fact that their local environment (e.g. large, dense urban areas with good infrastructure) is characterised by lower deployment costs. The GPS method enables continuous treatment, that is, the proportion of work places with access to high-speed broadband. Imbens (2000) shows that, similar to binary treatment, adaptation to GPS eliminates all distortions associated with differences in pre-treatment variables between treated (communities with good high-speed Internet coverage and untreated (low level) enterprises). Since there is no control group of municipalities with no high speed internet a low threshold is chosen to construct the control group. The sample consists of 290 municipalities for the period 2010-2017. Information on broadband supply is available at Post-och telestyrelsen (PTS) Mobiltäcknings- och bredbandskartläggning and local outcome indicators originate from establishment data held by Statistics Sweden. Fixed effects estimates show that highspeed broadband access (100 Mbit/s) is significantly positively related to local employment and number of establishments. The strength of the relationship is highest for small firms and increasing over time. No effects are found in the special support regions (Zone A Aid regions). Evidence based on the panel quantile regressions developed by Machado and Silva (2019) show that the relationship is higher in municipalities with shrinking employment. Finally, evidence from the dose-Response model with “continuous” treatment reveals no significant average treatment effect at medium and high level of high speed broadband internet but a positive one at a small level of high speed broadband access.

Farkas, Richárd (together with Katalin Erdös and Roland Baczur): *When post-merger effect remains hidden from cost pass-through: A case of a gasoline market merger*

Abstract: A large body of economic literature focuses on the type of cost pass-through since there are several theoretically unexplained phenomena provided by empirical researches. One of the most important issues is asymmetric cost pass-through named as „rockets and feathers” by Bacon (1991). Diverse investigations demonstrate mostly on markets for gasoline that prices rise faster after costs increase than they fall (Peltzman, 2000; Verlinda, 2008; Tappata, 2009; Remer, 2015). However, satisfactory theoretical explanation to asymmetric cost pass-through was not developed to date, empirical researches identify several causes of „rockets and feathers”. Deltas (2008) provides evidence on US gasoline market that higher market power entails asymmetric cost pass-through. Polemis (2014) confirms this finding focusing on US and European gasoline markets. Yang (2008) and Byrne (2017) demonstrate the relation between consumer search costs and cost pass-through while Lewis (2012) shows asymmetric pass-through as a result of tacit collusion. Although there is no unambiguous relation between the abovementioned possible causes and asymmetry of cost pass-through, many researchers regard firms that can price asymmetrically as price maker firms. Ritz (2015) emphasizes that loads of them go further and claims that a market is uncompetitive if and only if cost pass-through is asymmetric. Based on findings of Bacon (1991) and the views described by Ritz (2015) cost pass-through examination became a hard and widely used tool for estimating the

level of competition and underpin competition policy interventions. Thus, focusing on cost pass-through grew into conclusive process before deciding whether merger of firms might be allowed. Present paper provides empirical evidence that relation between cost pass-through asymmetry and uncompetitive markets is not obvious. We focus on Hungarian gasoline market, where a quite large acquisition between two chains allowed us to examine post-merger effect. We found significant increase in both affected firms' and industry's markups meanwhile cost pass-through gave no sign of uncompetitiveness.

Fidrmuc, Jarko (together with Makram El-Shagi and Steven Yamarik): *Inequality and credit growth in Russian regions*

Abstract: We test the Rajan hypothesis using data for Russian regions from 2000 (after the ruble crisis) to 2012 (before the introduction of international sanctions). The Rajan hypothesis predicts that rising income inequality leads politicians to expand credit for the poor, which in turn, fuels a consumer credit boom. Russia provides a unique research opportunity because it is a post-communist transition country with 75 diverse regions. We find that a rise in income inequality is positively correlated with personal loan growth in Russia. We also find a statistically weaker, albeit economically larger, relationship between economic inequality and corporate credit. Taken together, our results provide support for the predictions of Rajan in a country with extreme regional differences and a long history of populist policies.

Fritz, Oliver (together with Karin Maier): *Overtourism: Concept, causes and policies*

Abstract: The problem of overtourism has not only seen a revival in the tourism economics literature but has also become of interest to a wider public when mass protests occurred in destinations with a high concentration of tourists like Venice, Barcelona or Dubrovnik. To some extent overtourism returns as "old wine in new bottles" since mass tourism phenomena have been discussed before under headers like carrying capacity, unbalanced tourism or destination resilience. A fast-growing demand, especially from Asian countries with a broadening middle-income class increasingly inclined to travel abroad, has increased the pressure, in particular for city destinations. This paper discusses the concept of overtourism and those factors responsible for its reoccurrence. It then turns to various policy options available to destinations and tourism organizations to curb overtourism.

Frohwerk, Sascha: *Agglomeration in a retail location model*

Abstract: Location models for retail stores like the gravitational model or any kind of logit model do not include agglomeration effects. They usually assume, that customers to a single trip to buy a single good. Only very few papers examine the consequences of combining trips and even they only consider very restricted combinations. In this paper we extend the gravitational model to include all kinds of combination of shopping trips and calculate the resulting attractiveness of a location. We show a simulation of the model results using a small set of data from Berlin. This includes official population data, travel times, customer reviews and a questionnaire on shopping behavior.

Fülöp, Györk: *Traffic modelling and its static safety impact – first steps of safety optimised navigation in urban environment*

Abstract: The presented study has an explorative approach to the definition of hazardous urban areas, where bike-car accidents might happen. As a preparation for emission-reduction of European cities, individual transportation has to face a transition period of increasing

number of accidents, due to the growing number of uncontrolled bike–car encounters in urban traffic. These situations can be reduced with careful urban traffic planning, which might clarify the momentum and intention of all participants, therefore providing a transparent traffic situation. But where to look, where to start the urban planning? The problem is, that there is not enough/homogeneous information for the proper definition of accident hotspots. The presented study introduces a differential modelling, which can provide static (map-like) information in grate volume, and homogeneous quality. I also show three case studies prepared in Berlin 11th district (D), Denver 4th district (USA) and Budapest (HU). These assessments have been used also to give proof-of-concept, and have been analysed in a statistic and empiric manner.

Haas, Anette (together with Kerstin Tanis): *Out of dependence on social benefits - the transition of migrants into work and the influence of local labour market in Germany*

Abstract: In Germany the composition of immigrants has changed considerably in recent years: many newcomers originate from the young EU countries (accession in 2004 or 2007) or Balkan countries and the war and crisis regions of the world. Despite a sustained upswing in the labor market, migrants are twice as affected by unemployment as locals. However, equal participation in working life is an essential prerequisite for successful integration in Germany. After all, gainful employment means not only a secure income and economic independence, but also the possibility of active participation in society. Improving the integration of migrants into the labor market is therefore a core task of integration policy. An important goal is to ensure that people who receive basic insurance become independent of benefits by taking up work for a living to overcome the poverty situation as quickly as possible. Our data basis is the Integrated Employment Biographies (IEB) of the Institute for Employment Research (IAB) of the Federal Employment Agency. The observation period covers 2011-2017, the time span marked by diverse new immigration and employment growth. Regional variables originate from the official statistics of the Federation and the Länder. The analysis units for this paper are independent cities and counties of the basic social security recipients' places of residence. It is a well-known fact that lack of a suitable professional qualification complicate the labor market entry. However, regional conditions for integration differ in terms of the absorption capacity of the labor market and the people competing for locally offered jobs. As a result, for two foreign workers with comparable labor market opportunities (similar individual characteristics such as qualification and labor market experience, etc.) there are regional differences by taking up a job. Thus, large cities differ from other types of districts, especially after a longer period in receipt of benefits. In large cities, it is much more difficult to terminate the receipt of benefits through employment. This is because the unemployment rate in large cities is often higher than in the surrounding areas. Even though there are a large number of employment opportunities in cities, there is greater competition, which makes it more difficult to take up a job. This point to the fact that migrants very often concentrate on large cities and therefore have to face higher competition on the local labor market. Furthermore, first results show significant differences of individual regional characteristics for the probability of receiving benefits. For example, it has a particularly negative effect on individual benefit recipients if the proportion of foreign benefit recipients in the foreign population rises. The higher this proportion is regionally, the more difficult it becomes for persons with a migrant background to leave the social benefit receipt. This in turn leads to a further increase. A key finding of the (preliminary) paper is that on the one hand, foreigners can benefit particularly strongly from booming regions, but on the other hand, negative developments hurt them more compared to locals.

Kindt, Anna-Maria (together with Antje Weyh): *From university to industry: A regional*

Abstract: Small and medium-sized enterprises (SME), being limited in their financial and human resources, often struggle with innovation as a crucial prerequisite for firm development. Sourcing of external knowledge is an important way to overcome their limitations (Collinson and Quinn, 2002). To integrate the external knowledge, SMEs need to enhance their absorptive capacity (Cohen and Levinthal, 1990). The employees of the firm are therefore an important strategic asset (Kaiser et al., 2018). This article aims at shedding light on SMEs employing former university scientists and possible benefits for the hiring firms. We use linked employer-employee-data from the German labour-market statistic for the years from 1993 on to identify SMEs that hire individuals directly out of the university. Thereby we focus on the TU9, the nine leading technical universities in Germany. These are regarded as innovation leaders and account for more than half of the graduates in the engineering fields in Germany. University scientists gain experience in research and become part of the research community. These individuals can provide not only human capital in terms of knowledge and skills acquired but also social capital (Partanen et al., 2008; Corredoira and Rosenkopf, 2010). Following the literature on high-skilled migration (see Mawdsley and Somaya, 2016), we assume that the hiring of individuals formerly employed by universities brings in human and social capital and contributes to the performance of the employing firm. Due to the fact that patent data usually underrepresents SMEs and industry branches (Ter Wal and Boschma, 2009) we look at performance outcomes leading to the research question: How does the hiring of individuals formerly employed by a university contribute to the firm performance of SMEs? By applying a flexible matching approach that is able to keep exactly the time of switching from university to industry, we identify the development of the firm after hiring. We are interested in firm performance represented by firm growth in terms of full-time equivalents, the development of wages within the firm and a subsequent hiring of high-skilled individuals after a period of three years after hiring the first one. Contemporaneously we look at the development of the labour quality within the firms. This way we can identify outcomes of knowledge and skill transfer from universities. To investigate if geographical proximity to a TU9 university is beneficial for the hiring of former university researchers we differentiate between incoming individuals from within or outside the region. This relates to the assumption that the origin of incoming employees, distant or close and its interplay with the relatedness of knowledge determines the impact of the incoming knowledge within the firm (Boschma et al., 2009). In a first step of the empirical analyses we identified the individuals employed at the university in one year, leaving the university the next year. We see that about half of the scientists leaving the university move into an SME. Individuals staying in proximity to the university can be found in the larger cities of the sample. The movers predominantly orientate towards the south of Germany.

Kukuvec, Anja (together with Harald Oberhofer): *The propagation of business expectations within the European Union*

Abstract: Expectations of firms play a crucial role in economics. They matter for their decision making and thus impact investment, future employment and price setting. Taking theory to the data, the relevance of firms' beliefs has been shown for disaggregate and aggregate outcome variables. As a natural advancement, expectations themselves constitute an object of interest. Related to the formation of expectations is the question whether expectations are interdependent: when agents interact, their views about future economic developments might be exchanged. While e.g. in the business cycle model by Angeletos and Lao (2013) coordination and communication can lead to contagion effects of sentiment – the “noise” part of expectations – research analyzing whether such interdependence of expectations can be found in the actual expectations data is scarce. In this paper, we fill this gap by empirically

investigating the transmission of firms' expectations within the European Union. In particular, we study how changes of firms' expectations in a certain industry in a member country, on average affect firms' expectations in other member states both in the short- and in the long-run, respectively. To this end, the paper relies on quarterly business survey data provided by the European Commission which are augmented by data on gdp, production, employment, labor costs, capital stocks and national stock price indices. We apply a powerful space-time framework to model spillover effects in business expectations within and across industries and countries and simultaneously account for common factors. Using the insights from the input-output network literature, we propose trade in intermediate goods as a measure for the magnitude of interactions between countries' industries. In the first set of space-time models, we only allow for a single transmission channel per regression, imposing that expectations are solely propagated either upstream or downstream the European value chain. After finding that both channels matter empirically, we include them simultaneously, which requires the estimation of higher order dynamic space-time models. Since spillovers could further differ within and across countries (and industries), we make use of the additional dimensions in our network data, split up the network into domestic, foreign within- and across-industries networks and in doing so allow the diffusion process to be more flexible. The results from the space-time models indicate significant spillover effects in business expectation formation over trade dependencies even when allowing for specific reactions of European industries to common factors. This suggests the occurrence of local spillover effects implying that changes in expectations will be multiplied due to repercussion effects. A closer investigation of the propagation channels reveals that while expectations are transmitted both upstream and downstream the value chain, the latter channel matters more. When comparing linkages within and across countries, the results show that domestic dependencies are generally associated with larger coefficients. Regarding the transmission to foreign industries, only linkages to the same industries across national borders are relevant, while linkages to other industries in foreign countries are not directly transmitting expectations.

Niebuhr, Annekatriin (together with Cornelius Peters): *Participation in professional training and dynamic agglomeration economies*

Abstract: This paper analyses where the human capital accumulation of workers takes place: within establishments or outside, elsewhere in the local labour market. It distinguishes learning externalities arising at the regional level from those arising at the establishment level. Using administrative data for Germany from the Integrated Employment Biographies (IEB) of the IAB, wages of newly established employment relationships are analysed. Our results indicate that these entry wages are significantly higher the larger the local labour markets and the larger the establishments were in which work experience previously was gained. This suggests that both – working in big cities and in large establishments – gives rise to learning externalities and thereby to regional wage disparities since large establishments are overrepresented in urban labour markets. Moreover, we investigate whether (regional) disparities in participation rates in professional training might contribute to these learning effects.

Peisker, Jonas (together with Asjad Naqvi): *The distributional impact of floods across European regions and sectors*

Abstract: This study investigates the spatially disaggregated economic impacts of 395 riverine floods that occurred 1985–2015 across 257 European regions. A flood magnitude index is constructed that takes into account the floods' duration, severity, and land classification affected. The dependent variables – gross value added, gross fixed capital formation, and hours worked – are disaggregated into six economic sectors. Effect sign, size, and significance are

heterogeneous between sectors, income groups, and degrees of economic specialisation. The results corroborate the evidence on short-term negative effects on aggregate output. On sectoral level, significant effects are found in Agriculture, Construction, Finance, and Industry. Based on the estimated marginal effects and historical flood magnitudes, the regional pattern of foregone value added and investment is shown. The general economic divide between Western and Eastern Europe also shapes the spatial distribution of flood effects. In low-income regions positive effects are observed in some sectors, possible evidence for ‘creative destruction’.

Pennerstorfer, Dieter (together with Jens-Peter Loy, Daniela Rroshi, Christoph Weiss and Biliana Yontcheva): *Consumer Information and Price Transmission: Empirical Evidence*

Abstract: We investigate how consumer information affects price adjustment in the Austrian retail gasoline market. Our measure of consumer information is obtained from detailed census data on commuting behavior, as commuters can freely sample prices on their commuting route and are thus better informed about prices. A threshold error-correction model suggests that prices adjust more quickly if cost shocks exceed certain thresholds. Parametric and semi-parametric regressions show that a larger share of informed consumers increases both transmission speed and pass-through elasticity. More informed consumers reduce the asymmetry in thresholds, but have no effect on the asymmetry in the speed of adjustment.

Renner, Anna-Theresa (together with Yuxi Wang): *Provider Quality as a Determinant of Hospital Choice in the Italian National Health System: Local versus Global Information*

Abstract: In the Italian National Health Service patients have free provider choice when it comes to hospital care. This means that some of the local health authorities (LHA) are “exporters” of care as they treat patients outside of their own LHA, whereas others are “importers” meaning that patients travel to get care outside of their LHA. In general, regions have an incentive to increase inflows as they are paid for each external patient on a pay-per-case basis. In general, southern Italian regions are importers, whereas northern regions are exporters of inpatient care. While this might increase efficiency for some specialised treatments, it raises concern of reduced equity of access and financial sustainability in the South. Since, especially for elective services such as hip replacements, patients can carefully select the provider, it is highly relevant to know how patients form their decision to bypass their closest provider(s) and incur the private costs of travelling. We therefore exploit a patient-level dataset on all hip replacement procedures in Italian hospitals performed on the elderly population (65+) from 2010 to 2015. In particular we are interested whether, all else equal, patients take into account hospital specific quality indicators related or unrelated to hip replacements, or whether they are primarily reacting to information from their closer (regional) network. The theoretical framework of our study builds upon the theory of decision heuristics from behavioural economics, namely the availability heuristic and the “law of small numbers”, as well as patient choice models often used in health economics. In our empirical model we will estimate the share of patients from region r undergoing hip replacement surgery in hospital h in year t . The main explanatory variables of interest are the overall quality of a hospital, and the quality of a hospital as it was experienced by patients from a specific comune only (both variables are lagged by one year). The former will be referred to as global quality information, the latter as local quality information. Both level of quality information will include broad quality indicators such as overall in-hospital mortality and readmission rates, as well as surgery specific quality indicators such as length of stay or 30-day-readmission. We will include an extensive set of patient, hospital and comune specific control variables, such as age, gender, education, number of beds, and economic indicators, as well as the travel time between the comune of the patient and that of the hospital. Depending on data availability, we will also control for

commuting flows between comune r and hospital h 's comune, as well GPs per person in each comune. To see if our specification actually identifies the treatment effects of quality, we will perform placebo regressions on a control group of emergency care patients. The coefficients will be estimated using different specifications to account for the likely overdispersion in the data, such as Poisson, Negative binomial or Tobit

Rokicki, Bartłomiej (together with Cieslik Andrzej): *Market Potential with Regional Price Deflators*

Abstract: Does market potential decreases or increases, if regional price differences are taken into account? This paper applies regional price deflators to calculate regional market potential and compares its values with the ones obtained without taking into account the existence of regional price differentials. Furthermore, we assess the impact of newly estimated market potential on regional wages. Additionally, we verify the relative adequacy of the market potential approach and the wage curve approach in terms of explaining regional wage differentials. Applying data for the US and Poland, we find that market potential changes significantly if regional price indices are included. We also prove that the impact of market potential on regional wages is weaker than previously assumed. Moreover, we show that it has less explanatory power in explaining regional wage differentials as compared to the wage curve.

Rokicki, Bartłomiej: *Actuarial credibility approach in assessment of major infrastructure projects*

Abstract: The value of global infrastructure spending, consisting mainly of large-scale infrastructure projects, is estimated to be equivalent to almost 4% of global GDP (McKinsey Global Institute, 2013). However, if to measure performance effectiveness of those projects in three dimensions, namely budget, time and benefits, the evidence reveals that "approximately one out of ten megaprojects is on budget, one out of ten is on schedule, and one out of ten is on benefits, then approximately one in a thousand projects is a success, defined as on target for all three" (Flyvbjerg, 2014). In the present paper we focus on large infrastructure projects in Poland and Ukraine in order to verify the determinants of cost escalation and delivery delays. Furthermore, we apply actuarial credibility approach to show that simple statistical tools can improve project planning, if used by policy makers. We find that there exists significant differences between projects financed nationally and co-financed by the European Union. We also prove that there are differences between different types of projects and that planned costs are correlated with delivery slippage. Finally, we show that actuarial credibility could be applied instead of more complex tools in order to estimate possible cost escalation.

Schindler, Nora: *Income Inequality and Voting*

Abstract: In the course of the last decades, many developed economies have experienced a surge in income inequality. A large body of literature aims at examining the effect of this increase in income inequality on different social and economic outcomes. A number of studies have focused on the effect of income inequality on voter turnout and the increase in support for radical right-wing parties. Voter turnout is likely to be skewed by income and policies that are implemented will tend to favour people that are comparatively better off (median voter hypothesis). Since the lower income group is likely to benefit less from implemented policies, it is assumed that low-income voter participation is discouraged according to the class-bias hypothesis (Horn (2011)). Following the argument of the class bias hypothesis, economic inequality and voter turnout should show a negative correlation (Solt (2010) and Mueller and Stratmann (2003)). Low participation in elections will lead to "inequality of representation

and influence are not randomly distributed but systematically biased in favour of more privileged citizens – those with higher income, greater wealth and better education and against the less advantaged citizen” (Lijphart (1997, p.1), Mueller and Stratmann (2003)). This argument is also supported by the median voter hypothesis (Meltzer and Richard (1981)). The median voter will have lower demand for taxes and transfers if low income voters refrain from voting. This implies that inequality will increase further (Malinovic (2000), Malther (2008)). Conflict theory predicts that voting participation should increase with higher inequality. A political discussion is spurred by the differences in political preferences arising due to the inequality. Horn (2011) points out that the root of the change in income inequality is important. If the change is driven by a surge in high incomes, low and middle-income voters should unite to voice their preferences. This should result in higher participation levels. If on the other hand, a decrease in the incomes at the bottom of the distribution is responsible for the rise in income inequality, Horn (2011) predicts the voting participation to decrease. Cross-country studies include Lancee and Van Werfhorst (2011) for a subset of EU countries, Solt (2008) for 23 industrial countries and Mahler (2002) for a sample of 12 developed countries. All three studies find a negative effect of inequality on political engagement. Single-country studies include Galbraith and Hale (2008) and Solt (2010). Both analyse US data and find that inequality reduces voter turnout but rich people tend to vote more. This supports the class-bias hypothesis. Leigh (2005) for Australia finds that inequality increases to vote for the labor party and Yamamura (2009) for Japan finds that inequality and age-based heterogeneity significantly affects voter turnout. Han (2016) finds that income inequality increases the likelihood to vote for radical right-wing parties. Since there are no single-country studies for Europe, it will be of value to look at the impact of income inequality on electoral turnout as well as the increased support for a radical right-wing party. This analysis is carried out for Austria.

Schulze, Kathrin (together with Thomas K. Bauer and Michael M. Tamminga): *Female Labor Supply and Population Aging*

Abstract: As a consequence of demographic change, population aging is one of the most urgent issues worldwide. With an old-age dependency ratio (DR) of 21%, Germany ranks sixth worldwide according to the World Population Prospects . One of the effects of population aging is a declining workforce, which gives rise to the question of how to counteract this trend. The three most relevant channels through which this might be achieved all operate through increased labor force participation of previously underrepresented groups. This can be implemented by either increasing immigration, raising the retirement age or encouraging higher participation rates of other parts of the population having a labor market participation rate below average. One of the groups with potentially still unused labor market potential are females. Previous research has shown that female labor supply expands under demographic pressure, but evidence on the exact relationship between an aging society and female labor supply is relatively scarce. Therefore, our paper aims to shed light on this relationship. In particular, we want to assess whether an increase in the DR leads to changes in the female labor force participation (FLFP) using data from the German Microcensus (MC) for 1995–2015. Following the spatial approach, originating from the migration literature, we estimate the relationship on the year-region-skill level, assuming that workers are better substitutable within certain skill levels in a specific region and year. Our first results indicate that an increasing DR leads to a rise in FLFP, which may be explained by two reasons. First, workers on the verge of retirement may be substituted by more capable female workers. Second, there arises a growing need for personnel in care professions, which may induce more women to enter the labor force provided that they are more prevalent in the care sector. If this is the case, the results would imply, that an increase of female labor supply would indeed be a valid policy instrument to counteract some of the adverse labor market effects of population aging. We add to the existing literature, that links growth in FLFP to changes in the cohort size. However, in

contrast to previous studies, we directly relate these changes to variations in the size of another cohort and thus establish a direct connection to demographic change. To the best of our knowledge, until now no one has examined the link between population aging and rising FLFP.

Straubinger, Anna (together with Erik T. Verhoef and Henri L. F. de Groot): *The Impact of Novel Mobility Solutions on Related Markets – An Urban Air Mobility Assessment Using a General Equilibrium Model*

Abstract: Novel mobility solutions have the potential to not only change existing transport systems but can also have long-run impacts on related markets, most of these changes stemming from induced spatial patterns of residential and work location choices. It thus is essential to incorporate long-term effects like changes on the land, labor and consumer good market into the assessment of novel mobility solutions to enhance findings that can be derived from direct impacts of changes to the transport system. This research therefore applies an urban spatial computable general equilibrium (CGE) model when evaluating drastic changes to the transport system by the introduction of urban air mobility (UAM). UAM describes an on-demand urban transport service with passenger drones. For further background on this topic please refer to e.g. Straubinger et al. (2019). Building on the model of Anas and co-authors (Anas und Hiramatsu 2013; Anas und Kim 1996; Anas und Rhee 2006) we develop a framework that enables us to assess the long-run impact of the introduction of novel mobility solutions on the transport market as well as on related markets. The model includes companies that produce goods with the input of low and high skilled labor as well as land. Applying a CES production function the model assumes constant elasticities of substitution between the different types of labor and a different, constant elasticity between land and labor. Besides that low and high skilled households maximize their utility by consuming housing, consumer goods and leisure time, assuming a Cobb-Douglas relationship. Every household has a certain time budget which can either be spent working, thus earning money, on leisure time or travelling. The monetary and the time budget are strongly related, we therefore work with only one constraint for the optimization. The third actor within the model is the public household that earns taxes and finances transport infrastructure. Market clearance on the markets for land, labor (high-skilled and low-skilled) and consumer goods lead to an equilibrium. Including amenities as well as agglomeration effects allows for the modelling of different spatial set-ups of cities (Brueckner et al. 1999). The distinction of different household types (high and low skilled) is especially relevant for novel mobility solutions that are expected to have rather high prices during market introduction and later. Empirics (Gin und Sonstelie 1992) show that especially for modes with massively different travel speeds which due to high prices might only be accessible to a few have the potential to provoke different location choices over different income groups. Thus, differentiating between different household types gives the opportunity to discuss investment in new modes of transport also from an equity perspective.

Tamminga, Michael M. (together with Thomas K. Bauer and Christian Rulff): *Berlin Calling – Internal Migration in Germany*

Abstract: In Germany, being one of the oldest countries in the world, only surpassed by Japan, demographic change is one of the defining social challenges in the coming decades. However, the process of demographic change is heterogeneous on the regional level and might be reinforced or mitigated by migration movements. In order to understand this relationship, it is essential to analyze the drivers of migration patterns in Germany. Using innovative data containing every single migration movement between municipalities (NUTS-3) disaggregated by age-groups, based on administrative records between 2000 and 2015 for the first time; we are able to have a precise look on internal migration in Germany. By enriching this data

with regional economic information like GDP, unemployment rates, age-specific wages, and housing prices, we can identify the relevant push and pull factors of internal migration over different stages in the life-course. Another contribution to the existing literature concerning internal migration is the inclusion of housing prices as a price index on a small regional level. Using PPML gravity models, we are able to identify the predominant role of regional economic considerations as drivers for internal migration in Germany, especially for the younger age-groups who are the majority of interregional migrants. In particular as push factors, labor market considerations are the most powerful explanatory variables for interregional migration. Furthermore, by including the share of persons in the same age group as the migrants as an explanatory variable, we can show, that internal migrants of the same age groups indeed cluster in densely populated areas and reinforce the regional heterogeneity of demographic change.

Tranos, Emmanouil (together with Christoph Stich): *Using the web to detect the clustering of economic activities in space*

Abstract: This paper proposes a new methodological approach to identify economic clusters. There are heated policy debates regarding what drives the success of business clusters, in addition to theoretical ones in academia. There are also real challenges with getting to grips with this problem, mainly with the quality and availability of economic activity data. Instead of focusing on top-down hierarchical industrial classifications and business registration addresses, we propose a bottom-up approach, which utilises the wealth of textual data available on archived commercial websites. To do so, we employ a novel source of archived web data. These are old websites which might not exist anymore. Thankfully, the Internet Archive has been archiving such online content from the mid-1990s and the British Library curates a UK-focused subset of these archived web data. Our approach enables us to detect economic clusters based on two dimensions: (i) physical proximity of the location of these economic activities and (ii) semantic similarity of economic activities based on the textual content of the commercial websites. After we calculate these distances, we perform unsupervised clustering, which reveals the colocation of similar types of economic activities. Our analysis focuses on London and enables us to move beyond the rigid and non-flexible top-down industrial classification, which cannot capture the clustering of evolving economic activities.