

National Research Network

The Austrian Center for Labor Economics and the Welfare State

Intermediate Report
September 2008 – March 2011

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Participating Institutions

University of Linz



University of Zurich



IHS Vienna



Berlin School of Economics and Law



University of Vienna



University of Innsbruck



University of Lausanne



University of Mannheim



University of Salzburg



Abstract

The National Research Network “The Austrian Center for Labor Economics and the Analysis of the Welfare State” quickly established itself as a research hub in labor economics and the analysis of the welfare state in Austria and Central Europe. As the main purpose of the Network is scientific excellence, the publication output is the most important: 153 research papers have been produced, among them 44 already published (or accepted) in refereed journals, 17 more are in a Revise & Resubmit phase. Not only is the quantity of research impressive, also the quality: among the accepted papers in journals, there are contributions in many top general and field journals (e.g. Quarterly Journal of Economics, Economic Journal, Journal of the European Economic Association, Journal of Public Economics, Journal of Econometrics, Journal of Applied Econometrics, Industrial and Labor Relations Review, Journal of Health Economics, Scandinavian Journal of Economics, ...). Moreover, most of these publications were collaborative research efforts, often between members of different Subprojects. The group associated also a large number of external co-authors (in the 61 papers mentioned above, 40 external co-authors were involved).

Members of the Network have also been active in leading international conferences; they were regularly present at the American Economic Association's Meetings (with two AER P&P publications), the European Economic Association and the field Associations (SOLE, EALE, ESPE, the major Bayesian, Public and Experimental Economics Meetings), as well as at meetings of CEPR, IZA and CESifo Networks. Members of the Network presented their work also at many major Universities worldwide.

Detailed research results cannot be explained here; some of the papers, e.g. on the impact of parental leave on the return to work, on fertility effects of plant closures or those on active labor market policy or model-based clustering are highly influential and (already) often cited.

As most research questions are also very interesting from a public policy point of view, we took great pains to optimize public outreach and inform both the general public but also decision makers in the administration about our results: we established a yearly and highly visible policy workshop (half-day) and collected a large number of press-citations in the Austrian and German/Swiss daily press.

The most important accomplishment of the Network was certainly the creation of a research infrastructure – both in terms of data, programs but also in terms of personal relations – which allowed the interdisciplinary collaboration of researchers from various disciplines: while the initiation and establishment of the collaborative structure occupied much of the time of the first part of the Network, future collaborations will emerge much easier starting from common grounds.

Zusammenfassung

Das Nationale Forschungsnetzwerk hat sich rasch als Forschungsfokus in Österreich und Mitteleuropa etabliert. Da der Hauptzweck eines Netzwerkes die wissenschaftliche Exzellenz ist, soll der Forschungsausput am Anfang stehen: 153 Aufsätze wurden verfasst, davon sind 44 bereits in internationalen referierten Zeitschriften publiziert (bzw. akzeptiert), 17 weitere sind im Revise & Resubmit Stadium. Nicht nur die Quantität, auch die Qualität der Beiträge ist beeindruckend: unter den akzeptierten Papers finden sich Beiträge in führenden allgemeinen und fachspezifischen Journalen (z.B. Quarterly Journal of Economics, Economic Journal, Journal of the European Economic Association, Journal of Public Economics, Journal of Econometrics, Journal of Applied Econometrics, Industrial and Labor Relations Review, Journal of Health Economics, Scandinavian Journal of Economics, ...). Die meisten dieser Publikationen wurden gemeinschaftlich verfasst, oft zwischen Mitgliedern verschiedener Arbeitsgruppen. Das Netzwerk hat auch mit einer großen Anzahl an externen Wissenschaftlern zusammengearbeitet (bei den 61 erwähnten Arbeiten sind bei 40 externe Koautoren beteiligt).

Mitglieder des Netzwerkes sind auch in die internationale wissenschaftliche Diskussion durch Beteiligung bei den führenden Konferenzen eingebunden; sie waren regelmäßig mit Vorträgen bei der American Economic Association's Meetings (mit zwei AER P&P Publikationen), der European Economic Association und den entsprechenden Fachgesellschaften (SOLE, EALE, ESPE, sowie bei der Bayesianischen Ökonometrie und den Public und Experimental Economics Meetings) präsent; darüber hinaus bei Meetings von CEPR, IZA und CESifo Netzwerken. Sie haben auch in vielen führenden Universitäten ihre Arbeit vorgetragen.

Für eine detaillierte Darstellung der Forschungsergebnisse ist hier nicht der Platz; einige der Aufsätze, z.B. über den Einfluss von Karenzurlaub auf die Rückkehr an den Arbeitsplatz, Fertilitätseffekte von Firmenschließungen oder die Evaluierung von aktiver Arbeitsmarktpolitik oder modell-basiertem Clustering sind bereits sehr einflussreich und wurden oft zitiert.

Da die meisten Forschungsfragen auch vom wirtschaftspolitischen Standpunkt sehr interessant sind, haben wir große Mühen darauf verwendet, die Ergebnisse auch öffentlich zugänglich und sichtbar zu machen. Wir haben einen jährlichen halbtägigen Politik-Workshop eingerichtet, um mit politischen Entscheidungsträgern unsere Forschungen zu diskutieren und haben vielfältige Artikel in der deutschsprachigen Tagespresse lanciert.

Die wichtigste Errungenschaft des Netzwerkes war aber sicherlich die Schaffung einer Forschungsinfrastruktur – sowohl hinsichtlich Datenzugang und –bereitstellung aber auch hinsichtlich persönlicher Verbindungen – die eine interdisziplinäre Zusammenarbeit von Forschern verschiedener Fachrichtungen gefördert hat: während die Etablierung einer solchen kollaborativen Struktur einen Großteil der Zeit der ersten 3 Jahre beansprucht hat, werden künftige gemeinsame Projekte nun sehr viel leicht vonstattengehen.

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1 General Report of the Network

Participating Researchers	Scientific Discipline	Research Institution	Financed from BS/FWF*)
Böheim, René, PhD	Labor Economics	University of Linz	BS
Brunner, Beatrice; lic. oec. publ.	Labor Economics	University of Zurich	FWF
Brunner, Johann K., o. Univ. Prof. DDr.	Public Economics	University of Linz	BS
Eckerstorfer, Paul, Mag.	Public Economics	University of Linz	FWF
Favre, Sandro	Labor Economics	University of Zurich	FWF
Feichtner, Nicole	Economics	Uni Linz	FWF
Fink, Martina, Mag.	Economics	Universität Wien	FWF
Frühwirth-Schnatter, Sylvia, Univ.Prof. Dipl.-Ing.in Dr.in	Statistics	IFAS – Institute for Applied Statistics	BS
Gächter, Martin, Dr.	Economics	University of Linz/Innsbruck	FWF
Gaillard, Simone	Labor Economics	University of Zurich	FWF
Graf, Gregor, Mag.	Economics	University of Linz	FWF
Hackl, Franz, Dr.	Economics	University of Linz	BS
Halla Martin, Dr.	Labor Economics	University of Linz	BS
Hintersteiner, Ingrid	Public Economics	University of Linz	FWF
Hofer, Helmut, Dr.	Economics	IHS, Vienna	BS
Hoffmann, Bernd, Mag.	Public Economics	University of Linz	FWF
Hummer, Michael, Mag.	Economics	University of Linz	BS
Kalkbrenner, Esther, Dr.in	Economics	Universität Wien	FWF
Kuhn, Andreas, Dr. oec. publ.	Labor Economics	University of Zurich	FWF
Lalive, Rafael, Prof. Dr.	Labor Economics	University of Lausanne	BS
Lehner, Thomas, DI.	Economics	University of Linz	FWF
Mayr, Karin, Dr.in	Assistant Professor	University of Vienna	BS
Pamminger, Christioph, Mag. Dr.	Statistics	IFAS	FWF
Parolini, Arno, Mag.	Economics	Uni Innsbruck	FWF
Pech, Susanne, a. Univ. Prof. Dr.in	Public Economics	University of Linz	BS
Pruckner, Gerald J., Univ.-Prof. Dr.	Economics	University of Linz	BS
Rabas, Alexander. Mag.	Economics	Uni Vienna	FWF
Ruh, Philippe	Labor Economics	University of Zurich	FWF
Sausgruber, Rupert, AProf.	Economics	Uni Innsbruck	BS
Schneebaum Alyssa	Economics	UMass Amherst	FWF
Schneeweis, Nicole, Mag. Dr.in	Labor Economics	University of Linz	BS
Schober, Thomas, Mag.	Economics	University of Linz	FWF
Schwazer, Peter, Mag.	Economics	University of Innsbruck	FWF
Secretary	Labor Economics	University of Linz	BS

Staubli, Stefan, Dr. oec. publ.	Labor Economics	University of Zurich; RAND Corporation; University of St. Gallen	FWF
Steinhauer, Andreas; lic. oec. publ.	Labor Economics	University of Zurich	FWF
Strauss, Ulrike, Mag.	Economics	Universität Wien	FWF
Theurl Engelbert, Dr.	Economics	University of Innsbruck	BS
Weber, Andrea, Prof. Dr.in	Economics	Universität Mannheim	BS
Weichselbaumer, Doris, Prof.	Economics	Hochschule für Wirtschaft und Recht Berlin	BS
Winter-Ebmer, Rudolf, Univ.-Prof. Dr.	Labor Economics	University of Linz and IHS	BS
Winner Hannes, Univ.-Prof. Dr.	Economics	University of Salzburg	BS
Wuellrich, Jean-Philippe; lic. oec. publ.	Labor Economics	University of Zurich	FWF
Zulehner, Christine, Prof. Dr.in	Economics	Universität Linz	BS
Zweimüller, Josef; Prof. Dr.	Labor Economics	University of Zurich	BS
Zweimüller, Martina, Dr.in	Economics	University of Linz	FWF

*) BS = Basic Staff (Research Institute), FWF = Additional Staff, funding requested from the FWF in the framework of the NFN

1.1 Goals of the Research Network

- Establish a Network of Austrian economists working in labor economics and related areas to join forces with international top researchers to cross-fertilize research.
- Involve the main Austrian institutions and the main Austrian researchers within the country and abroad.
- Collaborate in preparatory and data work to establish a matched data base on individual life histories coming from various administrative sources.
- Initiate interdisciplinary research between labor and population economists as well as researchers in public finance, health economics and experimental economics.
- Investigate causal questions in the before mentioned areas which are technically state-of-the-art and are, thus, internationally relevant.
- Cooperate with advanced econometricians and theoretical economists to expand the scope and depth of the analysis.
- Complement classical evaluation methods with more theory-based econometrics and experimental methods.
- Contribute to major scientific and policy questions in the areas of retirement, health care, income distribution, migration, family economics, labor market policies and taxation.

- Connect to the international scientific community and publish the results in international top journals.
- Reach out to the public and politics to communicate policy-relevant results in an easy-accessible fashion.
- Provide a focus point for researchers working in areas related to labor economics and the welfare state in and around Austria and provide communication and educational opportunities for young researchers.

1.2 Scientific Development of the NFN

The Research Network established itself quickly as a research hub in labor economics and the analysis of the welfare state in Austria and Central Europe. As the main purpose of the Network is scientific excellence, the publication output is the most important: 153 research papers have been produced, among them 44 already published (or accepted) in refereed journals, 17 more are in a Revise & Resubmit phase. Not only is the quantity of research impressive, also the quality: among the accepted journals, we do find contributions in many top general and field journals (e.g. Quarterly Journal of Economics, Economic Journal, Journal of the European Economic Association, Journal of Public Economics, Journal of Econometrics, Journal of Applied Econometrics, Industrial and Labor Relations Review, Journal of Health Economics, Scandinavian Journal of Economics, ...). Moreover, most of these publications were collaborative research efforts, often between members of different Subprojects. The group associated also a large number of external co-authors (in the 61 papers mentioned above, 40 external co-authors were involved).

Members of the Network have also been active in leading international conferences; they were regularly present at the American Economic Association's Meetings (with two AER P&P publications), the European Economic Association and the field Associations (SOLE, EALE, ESPE, the major Bayesian, Public and Experimental Economics Meetings), as well as at meetings of CEPR, IZA and CESifo Networks. Members of the Network presented their work also at many major Universities worldwide.

Detailed research results cannot be explained here; some of the papers, e.g. on the impact of parental leave on the return to work, on fertility effects of plant closures or those on active labor market policy or model-based clustering are highly influential and (already) often cited.

As most research questions are also very interesting from a public policy point of view, we took great pains to optimize public outreach and inform both the general public but also decision makers in the administration about our results: we established a yearly and highly visible policy workshop (half-day) and collected a large number of press-citations in the Austrian and German/Swiss daily press.

The most important accomplishment of the Network was certainly the creation of a research infrastructure – both in terms of data, programs but also in terms of personal relations – which allowed the interdisciplinary collaboration of researchers from various disciplines: while the initiation and

establishment of the collaborative structure occupied much of the time of the first part of the Network, future collaborations will emerge much easier starting from common grounds.

1.3 Teaching and Career Development of Young Researchers - Courses for Male and Female Students

The opportunities for young NFN-researchers to advance their scientific careers are wide-ranging. All participating institutions offer excellent PhD programs with courses not exclusively held by faculty members, but also by renowned visiting professors. To mention some examples, Prof. Joshua Angrist from MIT taught a PhD course in “Empirical Strategies” at the Studienzentrum Gerzensee (Switzerland). In January 2010, Joshua Angrist also followed the invitation of the NRN and gave a lecture about empirical strategies at the University of Innsbruck. Konstantinos Tatsiramos (IZA Bonn) offers a PhD Course in Labor Economics at the University of Linz and Christian Dustmann (Centre for Research and Analysis of Migration, London School of Economics) a PhD course on Migration Economics in Zurich. Furthermore, new course offers, e.g. a course on program evaluation and causal inference in Zurich, covering the methodology necessary for research done within the NRN, underpin the positive impact of the project on teaching as well.

Young researchers were also encouraged to apply for international conferences and to participate in workshops and summer schools. Among others, NRN researchers participated at IZA Summer School, Summer School in Advanced Econometrics at the London School of Economics, Summer School in Microeconometrics at the Barcelona Graduate School of Economics or Summer School in Psychological Economics and Economic Psychology in Trento. Young researchers also participated in several NRN workshops at the Universities of Linz and Salzburg, at workshops of the Research Priority Program in Empirical and Experimental Economics at the University of Innsbruck or a Workshop on Behavioral Public Economics at the University of Copenhagen.

Visits at international universities, e.g. UC Berkeley, MIT Boston or Queensland University of Technology, as well as attendance of courses taught by highly respected professors, such as David Card, Patrick Kline (both UC Berkeley), Guido Imbens (Harvard), Jeffrey Wooldridge (Michigan State University) or John Hassler (IIES, Stockholm University), illustrate the manifoldness of the support of young researchers provided by the NRN.

Career development: Five young members of the NFN received offers for a Full Professorship in Germany (Berlin, Mannheim) and Austria (Salzburg, Linz). For a full placement report for students it is too early (most PhD students are in their third year). One student got a job at the Vienna Institute for Economic Research; another student got a tenure-track female development position and was awarded a “Habilitationsstipendium” from the University of Linz.

1.4 Short Summary of Subprojects

Title	PI	Affiliation
Coordination	Winter-Ebmer, Rudolf	University of Linz
Aging	Winter-Ebmer, Rudolf	University of Linz
Labor Market Policy	Weber, Andrea	University of Mannheim
Population Economics	Zweimüller, Josef	University of Zurich
Industry dynamics and market structure	Christine, Zulehner	University of Linz
Health Economics	Pruckner, Gerald	University of Linz
Experimental Investigation of Labor Markets	Sausgruber, Rupert	University of Innsbruck
Taxation and Income Distribution	Brunner, Johann	University of Linz
Bayesian Econometrics	Frühwirth-Schnatter, Sylvia	University of Linz

1.4.1 Coordination Project

In the coordination project we provided basic support to all groups. Specific tasks were web-site design, data management, support in super-computing, conference organization and support for the setup of teaching. The main task was to provide the Subprojects with access to the Austrian Social Security Database (ASSD), to maintain it, to replenish it and “translate” the administrative structure of the data base into a structure useful to statisticians and economists – as well as to provide and merge auxiliary data sources.

1.4.2 Aging

We studied aging from the workers’, the firms’ and the society’s perspective. Major accomplishments concern the study of early retirement after job loss, evaluations of a subsidized old-age part-time scheme and the impact of a layoff tax on the employment of elderly workers, where we explore substitution strategies of firm in some detail. Moreover, we decompose earnings into firm and worker components to test, whether elderly workers set (due to overconfidence or misperceptions) reservation wages too high. Using data from SHARE (Survey of Health, Ageing and Retirement in Europe) we study retirement behaviour of European workers in relation to the “quality” of their previous job. In collaboration with other subprojects we analyze issues in the realm of population economics (in particular, family formation and fertility), gender issues, as well as, questions related to health, the

entry into the labor force and education. From these (ongoing) projects, already 13 papers are published in refereed journals so far.

1.4.3 Labor Market Policy

This subproject has analyzed the interdependence of economic outcomes and labor market policy conditions from the supply side perspective of individual workers and in the demand side perspective of firms. We have investigated how institutional regulations regarding pension benefits, labor market training, or flexible employment impact on individual labor supply and earnings. Further we studied how the choice of workforce composition affects the survival of startup firms. For the further investigation of labor demand related topics we set up a firm database based on the linked worker-firm component of the ASSD, the ASSD firm panel. We have also closely collaborated with other subproject on topics of joint interest. Several papers from these efforts have been published in the Journal of the European Economic Association, Economic Journal, Journal of Applied Econometrics, or the American Economic Review P&P.

1.4.4 Population Economics

Members of subproject 04 “Population Economics” investigated (i) the impact of family policies on fertility and employment and (ii) topics related to both population and health economics and/or other topics that are closely related to other NRN subprojects. For instance, the study „How does parental leave affect fertility and return-to-work? Evidence from two natural experiments“ by Rafael Lalive and Josef Zweimüller analyzes the effects of changes in the duration of paid, job-protected parental leave on mothers' higher-order fertility and postbirth labor market careers and has been published in the Quarterly Journal of Economics.

Other papers are invited for a revise and resubmit (or have already been published) in the Journal of the European Economic Association, Economic Journal, and Journal of Health Economics. Projects by subproject 04-members investigated the impact of early retirement on mortality; the impact of financial incentives and quota rule for employment of disabled workers; the impact of disability pension rules for employment of older workers, the impact of job loss on labor market outcomes of older workers; the cyclical behavior of workplace accidents; labor entry market conditions and long-run success on the labor market; the cultural determinants of unemployment; the impact of unemployment on right-wing extremist crimes.

1.4.5 Health

Research of the HEALTH ECONOMICS working group in the first funding period was on (i) Health care utilization and health status, (ii) Economics of prevention and (iii) Primary health care markets. We studied the effect of overweight and obesity on health care utilization in Austria and found that

overweight and obese persons had higher health expenditure and were more often away sick. In a related project we estimated the causal effect of screening participation on economic and health-related outcomes. As identification strategy we exploited regional variation in uptake caused by physicians' service inducement and found that screening increased demand for health services in the short-run whereas we did not find long-run cost saving potentials. In order to study the causal effect of health on income, we interpreted accidents on the way to and from the place of work as a negative health shock. Performing exact matching of treated and control workers and applying a difference-in-differences approach we found a significant and persistent causal effect of a negative health shock on employment and earnings.

Moreover, we analyzed the determinants of birth weight with a focus on the family status. Controlling for mother fixed-effects and different blocks of socio-economic variables we found evidence that newborn infants of married mothers have a significantly higher birth weight. Research on primary health care markets focused on the physician gender wage gap. Referring to a panel of physicians' annual earnings, we observed a gender earnings gap of about 32 percent and found that a substantial part of this difference cannot be explained by individual and market characteristics.

1.4.6 Experimental Investigation of Labor Markets

We conducted innovative experiments to examine questions regarding labor supply and the provision of effort. First, we have studied effort provision in response to changing tax incentives, and the cognitive perception of tax. Second, we have started to complement our laboratory experiments and extend them to more representative environments.

Finally, we have analyzed the question whether increasing competition in work relations give rise to unethical behavior, in particular, being dishonest about one's own performance. Next to our work in these core areas, we accomplished a number of publications on related topics. We have papers published, for example, in the "Journal of Public Economics", "Experimental Economics", and the "Journal of Economic Psychology". Two other papers are invited for resubmission at the "Journal of the European Economics Association". Over the past 3 years, we have been able to considerably strengthen our collaboration with other members of the NFN network. We have presented our work in numerous NFN-internal seminars as well as international workshops and conferences. We have organized several workshops with high-profile participants within the profession.

1.4.7 Taxation and Income Distribution

Research in the Subproject 08 focused on the revenue side of the welfare state, mainly from a theoretical point of view. The main objective was to improve our understanding of the optimal tax structure when both efficiency and redistribution are taken into account. In particular, we studied the potential role of different taxes, especially of those on bequests, capital income and consumption to supplement the labor income tax, taking as a starting point the well-known result by Atkinson and

Stiglitz (1976), which essentially says that the latter tax alone is sufficient. For this, we extended the Mirrlees-type model of optimal taxation to include realistic elements that have mostly been neglected so far by the literature. These elements are differences in inherited wealth, wage uncertainty and relative consumption concerns.

Empirical research within the project focused on the pension system, in particular on the regulations allowing early retirement. On the basis of past earnings careers of (early) pensioners, we calculated fair (or neutral) pension reductions per year of early retirement, which turned out to be considerably higher than the actually applied ones.

1.4.8 Bayesian Econometrics

The relevance of empirical research in economics relies on efficient econometric inference for highly structured flexible econometric models depending on latent variables. In Subproject 09, efficient new simulation-based algorithms for Bayesian estimation of various econometric models for discrete-valued panel data have been developed which are based on the idea of auxiliary mixture sampling. A second major scientific achievement has been to develop new techniques for model specification for latent variable models using either marginal likelihoods or model space MCMC methods which are based on Bayesian shrinkage priors. Finally, model-based clustering techniques have been developed for discrete-valued panel data in order to deal with unobserved heterogeneity in panels of life-time wage careers in the Austrian labour market.

1.5 Contribution of the Individual Subprojects to the Network Concept

In the proposal for the first funding period we declared the intention to integrate the various sub-projects in order to exchange the methodological knowledge, experience, and data sets. This integration led to fruitful research cooperation and synergies among the various scholars of the project. The research topics labor market policy and unemployment (LABOR MARKET POLICY), issues of individual health (HEALTH ECONOMICS) and studies on an aging population and its consequences for the pension system (AGING) were central to the network. Moreover, a series of joint projects between these subprojects have been started. The AGING working group provided important health-relevant information from their SHARE (Survey of Health, Ageing, and Retirement in Europe) surveys, and the HEALTH group exploited natural experiments based on Austrian labor market reforms that have been analyzed in another context before by the LABOR MARKET POLICY sub-project. Fertility and immigration (POPULATION ECONOMICS) influence current and future labor supply, in particular for females. This stresses the importance of this sub-project for the whole group.

Apart from the fact that several NFN members are affiliated with more than one subgroup, a joint effort of the sub-projects LABOR MARKET POLICY, HEALTH and POPULATION was undertaken that made the Austrian birth register data available to the network. The subgroups on EXPERIMENTS and

BAYESIAN ECONOMETRICS provided valuable methodological extensions to the other sub-projects. As an example, a joint experimental project on “wage expectation and labor market matching” was already started in the first funding period. The BAYESIAN ECONOMETRICS group has not only developed Bayesian treatment models, they also started working together with the AGING, LABOR MARKET POLICY and HEALTH sub-projects by using their administrative datasets for simulation purposes. Moreover, the BAYESIAN ECONOMETRICS input was especially fruitful to all empirical sub-projects given more complex statistical problems which were seen in the network. The TAXATION AND INCOME DISTRIBUTION working group provided much needed support in model-building and economic theory. Moreover, the group was also involved in the topical issues of taxation, labor supply and inequality - but in particular issues of retirement in cooperation with the AGING group.

1.6 Importance of the NFN for the Participating Institutions

For the Johannes Kepler University of Linz the Network was particularly important to shape the profile of the departments of economics and statistics within the faculty. This Network was the most successful research initiative in the faculty of economics and social sciences and serves as a role model for other initiatives. The Network – together with the pre-occupation with SHARE (Survey on Health, Aging and Retirement in Europe) – was instrumental to shape one of six university-wide research focus points on “Social Systems, Markets and the Welfare State”, which will shape the University-wide research efforts, but also personnel policies in the next 6 years.

Moreover, the Network was very important for the establishment of a joint PhD Program in Economics between the Universities of Linz and Innsbruck. The collaboration of researchers from the two places, together with the experience of the graduate students and young researchers at the Network allowed a smooth and successful start of the Program in 2009. Members of the Network are also active in a program application to the Austrian Science Funds concerning a PhD program on Demographic Change and Economic Performance, which will expand the activities of the Network and provide further education opportunities for young researchers.

The NRN-subproject POPULATION ECONOMICS borders on the research priority program “Behavioral Labor Economics and Social Interactions“ of the University of Zurich, which investigates altruism, social preferences and social norms on the labor market. The results from this area of research are very valuable for the better understanding of the impact of family policies and migration on the labor market. Moreover, there are important interactions with the field of research “Trade & Labor Markets“, which analyzes the effect of trade of capital, goods and services on the labor market. The field of research „Trade & Labor Markets“ is regarded as complementary to the NRN-subproject POPULATION ECONOMICS, since migrants (labor factor) as well as capital constitute production factors.

The Faculty of Economics and Statistics at the University of Innsbruck hosts part of the Subproject EXPERIMENTAL LABOR ECONOMICS and HEALTH. The work of both groups has contributed significantly to the international visibility of the faculty in particular and the university in

general. We have invited numerous researchers from inside and outside our network, organized workshops and seminars, constantly presented the outcome of our work at international conferences and published it in international journals. The University of Innsbruck has established seven research platforms, one of which is “Empirical and Experimental Economic Research”. Our work has importantly contributed to approving this platform. At all stages of our work, we have actively incorporated our research activities into teaching and the training of students at our faculty.

For the other partners of the Network – with a smaller number of participants – like Salzburg, IHS (Vienna) and the University of Vienna, the Network was a highly welcome research focus to broaden the research portfolio. In particular at the IHS and the University of Vienna, Research in Labor Economics was supported. The University of Vienna very recently established a new Vienna Center for Experimental Economics (VCEE) – which is headed by one of our early research partners (Jean-Robert Tyran from Copenhagen working on public and behavioral economics). We took the opportunity to involve him much more thoroughly in the new proposal to take advantage of this new focus in Vienna. This allows us to enlarge our group of public and behavioral economists, which is highly welcome and will strengthen this part of the Network enormously.

2 Publications and Presentations

2.1 Publications

See www.labornrn.at (publications) for downloads of published papers and official working papers. Other papers are available upon request from the authors.

a) Refereed Journals

Böheim, R. and U. Muehlberger (2009), Dependent self-employment: Workers between employment and self-employment in the UK. **Journal of Labour Market Research**. 42(2), 182-195.

Böheim, R., A. Stiglbauer and R. Winter-Ebmer (2009), On the persistence of job creation in old and new firms. **Economics Letters**. 105(1), 17-19.

Böheim, R. and A. Weber (forthcoming), The effects of marginal employment on subsequent labour market outcomes. **German Economic Review**.

Card, D., J. Kluve and A. Weber (2010), Active Labor Market Policy Evaluations: A Meta-analysis, **The Economic Journal**, 120, F452-477.

Cardoso, A. R. and R. Winter-Ebmer (2010), Female-headed firms and wage policies. **Industrial and Labor Relations Review**, 64(1), 143-163.

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2.2 Conference Presentations and Invited Talks

- Becker, S. O., A. Fernandes and D. Weichselbaumer: The Effects of Fertility on Hiring Chances, 2011, CEPR-Metting on The Role of Experiments for the Advancement of Effective Labour Legislation, Lucca, Italy
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- Böheim, R., G. T. Horvath and K. Mayr: The clustering of immigrant workers and the impact on their wages. Annual Meeting of the European Society for Population Economics (ESPE), London (UK), June 2010.
- Böheim, R., G. T. Horvath and R. Winter-Ebmer: Great Expectations - Past Wages and Unemployment Durations. NRN-Workshop, Linz (Austria), May 2009.
- Böheim, R., G. T. Horvath and R. Winter-Ebmer: Great Expectations - Past Wages and Unemployment Durations. IZA Summer School, Buch (Germany), May 2010.
- Böheim, R., G. T. Horvath and R. Winter-Ebmer: Great Expectations - Past Wages and Unemployment Durations. Annual Conference of the European Association of Labour Economics (EALE), Essen (Germany), June 2010.
- Böheim, R., G. T. Horvath and R. Winter-Ebmer: Great Expectations - Past Wages and Unemployment Durations. Annual Meeting of the European Society for Population Economics (ESPE), London (UK), June 2010.
- Böheim, R., N. Schneeweis and F. Wakolbinger: Evidence on employer-provided training in Austria and consequences for productivity, wages and inter-firm wage distributions. NRN-Workshop, Linz (Austria), April 2010.

- Böheim, R., M. Zweimüller: The employment of temporary agency workers in the UK – with or against the trade unions? Engelberg Labor Economics Seminar, Engelberg (Switzerland), January 2009.
- Böheim, R., M. Zweimüller: The employment of temporary agency workers in the UK – with or against the trade unions? Society of Labor Economics, Boston (USA), May 2009.
- Brunner, B.; Spring Meeting of Young Economists, Istanbul, 2009; Titel: „The Impact of Labor Market Entry Conditions on Initial Job Assignment, Human Capital Accumulation, and Wages.“
- Brunner, B.; Doctoral Student Seminar in Economics, Economics Department, University of Zurich, 2009; Titel: „The Impact of Labor Market Entry Conditions on Initial Job Assignment, Human Capital Accumulation, and Wages“
- Brunner, B.; Conference of the Austrian Economic Association, Linz, Austria, 2009; Titel: „The Impact of Labor Market Entry Conditions on Initial Job Assignment, Human Capital Accumulation, and Wages“
- Brunner, B.; 13th. IZA European Summer School in Labor Economics, Buch/Ammersee, Germany, 2010; Titel: „The Impact of Labor Market Entry Conditions on Initial Job Assignment, Human Capital Accumulation, and Wages“ (Poster)
- Brunner J. K., „Optimum taxation of life annuities“, Workshop on Longevity and Annuization, Paris School of Economics, 20.6.2008. (invited talk)
- Brunner J. K., „Optimum taxation of inheritances“, Research Seminar, University of Zürich, 5.11.2008. (invited talk)
- Brunner J. K., „Optimum taxation of inheritances“, Research Seminar in Neufelden, 6.12.2008.
- Brunner J. K., „Optimum taxation of inheritances“, Research Seminar, Freie Universität Berlin, 14.1.2009. (invited talk)
- Brunner J. K., „Optimum taxation of inheritances“, Tagung des Ausschusses für Bevölkerungsökonomik im Verein für Sozialpolitik, Essen, 13.2.2009.
- Brunner J. K., „Optimal taxation of bequests in a model with initial wealth“, CESifo Area Conference on Public Sector Economics, 10.4.2010.
- Brunner J. K., „Optimal taxation of bequests in a model with initial wealth“, NRN Workshop in Salzburg, 21.5.2010.
- Brunner J. K., „Die Erbschaftssteuer im Modell der optimalen Besteuerung“, 40. Wirtschaftswissenschaftliches Seminar Ottobereun, 13.9.2010. (invited talk)
- Brunner J. K., „Steuern auf Kapitaleinkommen und Vermögen“, Research Seminar in Neufelden, 2.12.2010.
- Eckerstorfer P., „Optimal taxes on wealth and consumption in the presence of tax evasion“, NRN Workshop in Linz, 6.11.2009.
- Eckerstorfer P., „Optimal taxes on wealth and consumption in the presence of tax evasion“, Annual Congress of the Austrian Economic Association in Vienna, 15.5.2010.
- Eckerstorfer P., „Optimal taxes on wealth and consumption in the presence of tax evasion“, Annual Congress of the Association for Public Economic Theory in Istanbul, 26.6.2010.
- Eckerstorfer P., „Optimal taxes on wealth and consumption in the presence of tax evasion“, Annual Congress of the International Institute of Public Finance in Uppsala, 25.8.2010.
- Eckerstorfer P., „Optimal mixed taxation in the presence of relative consumption concerns“, NRN Workshop in Linz, 19.11.2010.
- Frimmel, W., M. Halla and R. Winter-Ebmer: Marriage Subsidies and Divorce. NRN-Workshop, Linz (Austria), January 2009.
- Frimmel, W., M. Halla and R. Winter-Ebmer: Marriage Subsidies and Divorce: Analysis of Marginal Marriages. NRN-Workshop, Salzburg (Austria), May 2010.
- Frimmel, W., M. Halla and R. Winter-Ebmer: Marriage Subsidies and Divorce: An Analysis of Marginal Marriages, Annual Meeting of the Austrian Economic Association, Vienna, May 2010.

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- Frimmel, W., M. Halla and R. Winter-Ebmer: Marriage Subsidies and Divorce: An Analysis of Marginal Marriages, National Bank of Austria, Vienna (Austria), May 2010.
 - Frimmel, W., M. Halla and R. Winter-Ebmer: Marriage Subsidies and Divorce: Analysis of Marginal Marriages. Annual Conference of the European Society for Population Economics (ESPE), Essen (Germany), June 2010.
 - Frimmel, W., M. Halla and R. Winter-Ebmer: Assortative Mating and Divorce: Evidence from Austrian Register Data. Annual Conference of the German Economic Association, Kiel (Germany), September 2010.
 - Frimmel, W., M. Halla and R. Winter-Ebmer: Marriage Subsidies and Divorce: An Analysis of Marginal Marriages, National Taiwan University, Department of Economics, Taipei (Taiwan), September 2010.
 - Frimmel, W., M. Halla and R. Winter-Ebmer: Marriage Subsidies and Divorce: An Analysis of Marginal Marriages, Vienna University of Economics and Business, Economic Research Seminar, Vienna (Austria), October 2010.
 - Frimmel, W., M. Halla and R. Winter-Ebmer: Marriage Subsidies and Divorce: An Analysis of Marginal Marriages, ETH Zurich, KOF Swiss Economic Institute, Zurich (Switzerland), November 2010.
 - Frimmel, W., M. Halla and R. Winter-Ebmer: Marriage Subsidies and Divorce: An Analysis of Marginal Marriages. PhD Seminar, Linz (Austria), December 2010.
 - Frimmel, W., M. Halla and R. Winter-Ebmer: Marriage Subsidies and Divorce: An Analysis of Marginal Marriages, University of St. Gallen, Institute for Empirical Economic Research, St. Gallen (Switzerland), December 2010.
 - Frimmel, W., M. Halla and R. Winter-Ebmer: Marriage Subsidies and Divorce: An Analysis of Marginal Marriages, Annual Meeting of the Allied Social Science Associations, Denver (USA), February 2011.
 - Frimmel, W., M. Halla and R. Winter-Ebmer: Marriage Subsidies and Divorce: An Analysis of Marginal Marriages, Berliner Netzwerk Arbeitsmarktforschung, Berlin (Germany), February 2011.
 - Frühwirth-Schnatter, S.: Bayesian Variable Selection Problems for State Space and Other Latent Variable Models. Center for Research in Statistical Methods (CRISM), University of Warwick, UK, November 12, 2008.
 - Frühwirth-Schnatter, S.: Bayesian Variable Selection Problems for State Space and Other Latent Variable Models. Einaudi Institute for Economics and Finance (EIEF), Rome, Italy, December 4, 2008.
 - Frühwirth-Schnatter, S.: Bayesian Model Selection for Latent Variable Models. Goethe-Universität, Fachbereich Wirtschaftswissenschaften, Frankfurt/Main, Germany, November 18, 2009.
 - Frühwirth-Schnatter, S.: Computational Statistics - How to make complex data analysis feasible. Department of Statistics, University of Technology, Graz, Austria, May 14, 2009
 - Frühwirth-Schnatter, S.: Capturing Unobserved Heterogeneity in Discrete-Valued Panel Data Analysis. Princeton University Press Workshop on Semi-Parametric Bayesian Inference in Econometrics, Econometrics Institute, Rotterdam, The Netherlands, May 30, 2009 (invited talk).
 - Frühwirth-Schnatter, S.: Stochastic Model Specification Search for State Space Models. BISP6, Sixth Workshop on Bayesian Inference in Stochastic Processes, Bressanone, Italy, June 18-20, 2009 (invited talk).
 - Frühwirth-Schnatter, S.: Stochastic Model Specification Search for Gaussian and Non-Gaussian State Space Models. SIRE Econometrics Workshop, Strathclyde University, Glasgow, UK, March 2, 2010 (invited talk).
 - Frühwirth-Schnatter, S.: Label Switching Under Model Uncertainty. Workshop on Mixture Estimation and Applications, Edinburgh, UK, March 3-5, 2010 (invited talk).
 - Frühwirth-Schnatter, S.: Variable and covariance selection for latent variable models (invited talk). Valencia 9, International Meeting on Bayesian Statistics, Benidorm, Spain, June 4-8, 2010 (invited talk).
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- Frühwirth-Schnatter, S.: Logit, Probit, or Robit? - A Unifying Approach Using Location-Scale Mixtures of Probits. European Seminar in Bayesian Econometrics, Econometric Institute, Erasmus University Rotterdam, The Netherlands, November 5-6, 2010 (invited talk).
- Frühwirth-Schnatter, S.: Identifying mixture models under model uncertainty. ERCIM'10, 3rd International Conference of the ERCIM WG on Computing and Statistics, Senate House, University of London, UK, December 10-12, 2010 (invited talk).
- Frühwirth-Schnatter, S.: Bayesian variable selection and sparse regularization for latent variable models. Workshop on Bayesian Inference for Latent Gaussian Models with Applications, University of Zurich, Switzerland, February 2-5, 2011 (invited talk).
- Frühwirth-Schnatter, S.: Bayesian Variable Selection and Model Identification for Latent Variable Models. Workshop Information Theory and Applications, University of California San Diego, February 7-11, 2011 (invited talk).
- Gächter, M., P. Schwazer and E. Theurl: The Location of Private Physicians and the Impact of Competition, NFN-Workshop, University of Linz (Austria), November 2009.
- Gächter, M., P. Schwazer and E. Theurl: Stronger sex but earlier death: A socio-economic analysis of gender differences in mortality at the local community level. Research Seminar "Angewandte Ökonometrie", University of Innsbruck (Austria), January 2010.
- Gächter, M. and E. Theurl: The gender gap in mortality: A decomposition by cause of death and the impact of socio-economic factors, Workshop der Forschungsplattform "Empirische und experimentelle Wirtschaftsforschung", University of Innsbruck (Austria), March 2010.
- Gächter, M., P. Schwazer and E. Theurl: The Location of Private Physicians and the Impact of Competition, 1st Workshop of the Research Priority Program in Empirical and Experimental Economics, Innsbruck (Austria), March 2010.
- Gächter, M. and E. Theurl: The gender gap in mortality: A decomposition by cause of death and the impact of socio-economic factors, Annual Meeting of the Austrian Economic Association, Vienna (Austria), May 2010.
- Gächter, M., P. Schwazer and E. Theurl: The Location of Private Physicians and the Impact of Competition, 9th Annual International Conference on Health Economics, Management & Policy, Athens (Greece), June 2010.
- Gächter, M., P. Schwazer and E. Theurl: Stronger sex but earlier death: A multi-level socioeconomic analysis of gender differences in mortality in Austria, 8th European Conference on Health Economics, Helsinki (Finland), July 2010.
- Gächter, M., P. Schwazer and E. Theurl: The Location of Private Physicians and the Impact of Competition, 2nd Workshop of the Research Priority Program in Empirical and Experimental Economics, Innsbruck (Austria), October 2010.
- Gächter, M. and E. Theurl: Convergence of the Health Status at the Local Level: Empirical Evidence from Austria, Spring Meeting of Young Economists 2011, University of Groningen (NL), April 2011.
- Hackl, F., M. Halla, M. Hummer and G.J. Pruckner: Health Screening and Obesity in Austria, NRN Workshop, University of Linz, January 2009.
- Hackl, F., M. Halla, M. Hummer and G.J. Pruckner: Overweight and Obesity: How much do they cost? NRN Policy Workshop, Vienna, June 2009.
- Hackl, F., M. Halla, M. Hummer and G.J. Pruckner: The Economics of Screening, Annual Conference of the Austrian Public Health Society in Linz, September 2009.
- Hackl, F., M. Halla, M. Hummer and G.J. Pruckner: The Economics of Screening, Faculty Meeting of the Department of Economics, Eferding (Austria), December 2009.
- Hackl, F., M. Halla, M. Hummer and G.J. Pruckner: Overweight and Obesity: How much do they cost? NRN Policy Workshop, Linz, April 2010.
- Hackl, F., M. Halla, M. Hummer and G.J. Pruckner: The Economics of Screening, Annual Conference of the European Society for Population Economics, Essen (Germany), June 2010.
- Hackl, F., M. Halla, M. Hummer and G.J. Pruckner: Overweight and Obesity: How much do they cost? Institute for social and preventive medicine, Bregenz (Austria), August 2010.

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- Hackl, F., M. Halla, M. Hummer and G.J. Pruckner: Overweight and Obesity: How much do they cost? Lange Nacht der Forschung, University of Linz, November 2010, (Poster).
 - Hackl, F., M. Halla and G.J. Pruckner: Volunteering and the State, Lunch time research seminar, Department of Economics, University of Linz, November 2008.
 - Hackl, F., M. Halla and G.J. Pruckner: Volunteering and the State, Annual Meeting of the Austrian Economic Association, Linz (Austria), May 2009.
 - Hackl, F., M. Halla and G.J. Pruckner: Volunteering and the State, Annual Conference of the European Society for Population Economics, Seville (Spain), June 2009.
 - Hackl, F., M. Halla and G.J. Pruckner: Volunteering and the State, Annual Conference of the European Association of Labor Economics, Tallinn, September 2009.
 - Hackl, F., M. Halla and G.J. Pruckner: Volunteering and the State, Center for European Economic Research (ZEW), Mannheim (Germany), December 2009.
 - Hackl, F., M. Halla, and G.J. Pruckner: Volunteering and the State, Lange Nacht der Forschung, University of Linz, November 2010, (Poster).
 - Halla, M.: The Effect of Joint Custody on Marriage and Divorce, Annual Conference of the Society for Population Economics, London, June 2007.
 - Halla, M.: The Effect of Joint Custody on Marriage and Divorce, Annual Meeting of the Austrian Economic Association, Vienna (Austria), May 2008.
 - Halla, M.: The Effect of Joint Custody on Marriage and Divorce, Annual Conference of the European Association of Labour Economists, Amsterdam (Netherlands), September 2008.
 - Halla, M.: The Effect of Joint Custody on Marriage and Divorce, University of California, Berkeley, Goodman School of Public Policy, Berkeley (USA), April 2009.
 - Halla, M.: The Effect of Joint Custody on Marriage and Divorce, University of California, Berkeley, Center for Labor Economics, Labor Lunch Seminar, Berkeley (USA), September 2009.
 - Halla, M. and M. Zweimüller: The causal effect of income on health: Quasi-experimental evidence from accidents. Research Seminar at the Department of Economics, University of Innsbruck, May 2010.
 - Halla, M. and M. Zweimüller: The causal effect of income on health: Quasi-experimental evidence from accidents. Econometrics of Healthy Human Resources (Applied Econometrics Association), Rome, May 2010.
 - Halla, M. and M. Zweimüller: The causal effect of income on health: Quasi-experimental evidence from accidents. Annual Conference of the European Economic Association (EEA), Glasgow, August 2010.
 - Halla, M. and M. Zweimüller: The causal effect of income on health: Quasi-experimental evidence from accidents. Annual Meeting of the European Society for Population Economics (ESPE), Essen, June 2010.
 - Hofer, H.: Labour Supply Effects of a Subsidised Old-Age Part-Time Scheme in Austria. 4th European Workshop on "Labour Markets and Demographic Change"
 - Hofer, H.: Labour Supply Effects of a Subsidised Old-Age Part-Time Scheme in Austria. Austrian Economic Association, Linz
 - Hummer, M. and G.J. Pruckner: The Effect of Low Birth Weight on Expenditure for Children and Young Adults, Institute for medical statistics, informatics, health economics, Medical University of Innsbruck, October 2010.
 - Hummer, M. and G.J. Pruckner: The Effect of Low Birth Weight on Expenditure for Children and Young Adults, NRN Policy Workshop, Vienna, January 2011.
 - Kalkbrenner, E.: Extracting firm information from administrative data sources. NFN workshop, Linz
 - Kalkbrenner, E.: Extracting firm information from administrative data sources. MICRO-DYN "The demography of firms and industries", Paris
 - Kalkbrenner, E.: Institutional determinants of domestic and foreign subsidiaries' performance. European Association for Research in Industrial Economics, Ljubljana
 - Kalkbrenner, E.: Institutional determinants of domestic and foreign subsidiaries' performance. DEMO Universitat Autònoma de Barcelona
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- Kalkbrenner, E.: Acquired versus non-acquired subsidiaries: which entry mode do parent firms prefer? NFN workshop , Linz
- Kalkbrenner, E.: Acquired versus non-acquired subsidiaries: which entry mode do parent firms prefer? Graduate Seminar Universität Wien
- Kalkbrenner, E.: Acquired versus non-acquired subsidiaries: which entry mode do parent firms prefer? RGS 4th Doctoral Conference, Dortmund
- Kuhn, A.; Labor Economics Seminar, Engelberg, 2008; Titel: „The Long Term Consequences of Unemployment on Health“
- Kuhn, A.; Eröffnungssymposium NRN 'Labor and Welfare State', Linz, 2008; Titel: „To Shape the Future: How Labor Market Entry Conditions Affect Individuals' Long-Run Wage Profiles“
- Kuhn, A.; Labor Economics Seminar, University of Zurich, Engelberg, 2009; Titel: „To Shape the Future: How Labor Market Entry Conditions Affect Individuals' Long-Run Wage Profiles“
- Kuhn, A.; Annual Meeting of the Austrian Economic Association, Linz, 2009; Titel: „To Shape the Future: How Labor Market Entry Conditions Affect Individuals' Long-Run Wage Profiles“
- Kuhn, A.; HUI-Seminar, University of Zurich, Weggis, 2009; Titel: „To Shape the Future: How Labor Market Entry Conditions Affect Individuals' Long-Run Wage Profiles“
- Kuhn, A.; 9th Panel Data Conference, Bonn, 2009; Titel: „To Shape the Future: How Labor Market Entry Conditions Affect Individuals' Long-Run Wage Profiles“
- Kuhn, A.; Ifo/CESifo & University of Munich Conference on Empirical Health Economics, Munich, 2010; Titel: „Fatal Attraction? Access to Early Retirement and Mortality“
- Kuhn, A.; Labor Economics Seminar, University of Zurich, Engelberg, 2010; Titel: „An Empirical Analysis of Entry Level Wages, Labor Economics Seminar“
- Kuhn, A.; Joint Vienna Macroeconomics Seminar, IHS Vienna, 2010; Titel: „To Shape the Future: How Labor Market Entry Conditions Affect Individuals' Long-Run Wage Profiles“
- Kuhn, A.; Netspar theme conference ``Health and income, work and care across the life cycle'', Amsterdam, 2010; Titel: „Fatal Attraction? Access to Early Retirement and Mortality“
- Kuhn A.; Joint Workshop FORS, University of Lausanne and IDSC of IZA on Redistribution and Well-Being, Lausanne, 2011; Titel: „The Empirical Association of Subjective with Objective Measures of Inequality and Redistribution“
- Lalive, R.; Seminar, Amsterdam, 2010; Title: „Parental Leave and Mothers' Careers: The Relative Importance of Job Protection and Cash Benefits“
- Lalive, R.; AEA, Denver, Januar 2011; Title: „Parental Leave and Mothers' Careers: The Relative Importance of Job Protection and Cash Benefits“
- Lalive, R.; Seminar, Bergen, Februar 2011; Title: „How Does Early Childcare affect Child Development? Learning from the Children of German Unification“
- Pamminer, C.: Bayesian Clustering of Austrian Wage Mobility Data Using Finite Mixtures of Markov Chain Models. NRN Workshop, Johannes Kepler Universität Linz, October 2008
- Pamminer, C.: Model-Based Clustering of Categorical Time Series Using Finite Mixtures of Markov Chain Models with Logit Extension, BISP6 - Sixth Workshop on Bayesian Inference in Stochastic Processes, Accademia Cusano Brixen (Italy), June 2009 (Poster)
- Pamminer, C.: Model-based clustering of categorical time series using finite mixtures of Markov Chain models with Logit extension, ROeS Seminar, Johannes Kepler Universität Linz, September 2009 (Poster)
- Pamminer, C.: Model-Based Clustering of Categorical Time Series Using Finite Mixtures of Markov Chain Models with Logit Extension, Finding Thetas in Europe – Conference on Applied Bayesian Statistics and MCMC Methods in the Social Sciences, Universität Mannheim (Germany), April 2010
- Pamminer, C.: Entrants in the Austrian Labour Market: A Bayesian Analysis, NRN: Workshop, Salzburg, May 2010

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- Pamminger, C.: Model-Based Clustering of Categorical Time Series Using Finite Mixtures of Markov Chain Models with Logit Extension, 9th Valencia International Meeting on Bayesian Statistics & 2010 World Meeting of the International Society for Bayesian Analysis, Benidorm (Spain), June 2010 (Poster)
 - Pamminger, C.: Model-based Clustering of Categorical Time Series with Multinomial Logit Classification. 8th International Conference of Numerical Analysis and Applied Mathematics, Hotel Rhodos Palace, Rhodes (Greece), September 2010 (invited Talk)
 - Parolini, A.: Democracy and the Disincentive Effect of Redistribution NRN-Workshop October 6-7 2008, Linz.
 - Parolini, A.: Take-up of Tax Benefits. NRN-Workshop May 21, 2009, Linz
 - Parolini, A.: Take-up of Tax Benefits AG-Econometrics June 14, 2009, Innsbruck
 - Parolini, A.: Democracy and the Disincentive Effect of Redistribution. Brownbag Seminar, School of Economics, University of Adelaide August 24, 2009.
 - Parolini, A.: Effort Externalities in the Workplace. AG-Econometrics Nov. 30, 2010, Innsbruck
 - Pech S., “Optimum taxation of inheritances”, Annual Congress of the European Economic Association in Milano, August 2008.
 - Pech S., “Optimum taxation of inheritances”, Jahrestagung des Verein für Sozialpolitik in Graz, September 2008.
 - Pech S., “Optimal taxation of bequests in a model with initial wealth“, Annual Congress of the Austrian Economic Association in Linz, May 2009.
 - Pech S., “Optimal taxation of bequests in a model with initial wealth“, Annual Congress of the European Economic Association in Barcelona, August 2009.
 - Roero, C.: Sample selection and treatment models in a Bayesian approach, NRN: Labour Economics and the Welfare State, Workshop, Johannes Kepler Universität Linz, November 2009.
 - Sausgruber, R: How Non-Binding Agreements Resolve Social Dilemmas. Seminar at the University of Konstanz. May 2008.
 - Sausgruber, R: How Non-Binding Agreements Resolve Social Dilemmas. European ESA-Meeting, Lyon. Sept. 2008
 - Sausgruber, R: How Non-Binding Agreements Resolve Social Dilemmas. Workshop in Behavioral Public Economics, Copenhagen Oct 2008.
 - Sausgruber, R: Democracy and the Disincentive Effect of Redistribution. NrN Workshop “The Austrian Center of Labor Economics”, Linz. Oct. 2008.
 - Sausgruber, R: Are We Taxing Ourselves? Meeting of the Austrian Economics Society, Linz. May 2009.
 - Sausgruber, R: Voting on Thresholds for Public Goods: Experimental Evidence CESifo Venice Summer Institute: Behavioral Public Economics. July 2009.
 - Sausgruber, R: Confusion and Reinforcement Learning in Experimental Public Goods Games. European ESA-Meeting, Innsbruck. Sept. 2009
 - Sausgruber, R: Democracy and the Disincentive Effect of Redistribution. Seminar at CERGE-EI, Prague. Nov. 2009.
 - Sausgruber, R: Democracy and the Disincentive Effect of Redistribution. Seminar at the University of Jena. Dec. 2009.
 - Sausgruber, R: Testing Enforcement Strategies in the Field: Legal Threat, Moral Appeal and Social Information. AEA Meetings Atlanta. Jan. 2010.
 - Sausgruber, R: Effort Externalities in the Workplace. NrN Workshop “The Austrian Center of Labor Economics”, Salzburg. May 2010
 - Sausgruber, R: Resistance to Reform. International ESA Meeting Copenhagen. June 2010
 - Sausgruber, R: Democracy and the Disincentive Effect of Redistribution. Public Finance Seminar at the University of Michigan, Ann Arbor. Sept 2010 (invited talk)
 - Sausgruber, R: Resistance to Reform. Research Seminar. University of Salzburg. Dec 2010.
 - Sausgruber, R: Resistance to Reform. Workshop “Non-Decision Making” University of Bremen. Dec 2010.
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- Schnalzenberger, M.: The causal effect of income on health: investigating a policy reform in Austria. Annual Conference of the European Society for Population Economics (ESPE), Essen (Germany), June 2010.
- Schnalzenberger, M.: The causal effect of income on health: Investigating a policy reform in Austria. NRN-Workshop, Linz (Austria), November 2010.
- Schnalzenberger, M.: The causal effect of income on health: Investigating a policy reform in Austria. Engelberg Labor Economics Seminar, Engelberg (Switzerland), January 2011.
- Schnalzenberger, M. and R. Winter-Ebmer: The Role of Social Security Regulations for the Employment of the Elderly. Annual Conference of the European Association of Labour Economics (EALE), Amsterdam (The Netherlands), September 2008.
- Schnalzenberger, M. and R. Winter-Ebmer: Layoff tax and the unemployment of the elderly. Engelberg Labor Economics Seminar, Engelberg (Switzerland), January 2009.
- Schnalzenberger, M. and R. Winter-Ebmer: Evaluation des Malusystems bei der Sozialversicherung von älteren Personen. Arbeitsmarkt Workshop, Bundesministerium für Arbeit Soziales und Konsumentenschutz, Vienna (Austria), Juni 2009.
- Schnalzenberger, M. and R. Winter-Ebmer: Kann man durch Strafzahlungen die Beschäftigung älterer Mitarbeiter sichern? Arbeitsmarkt und Wohlfahrtsstaat - Policy Workshop, Linz (Austria), April 2010.
- Schneeweis, N., G. Brunello, M. Fort and R. Winter-Ebmer: Education and health. What's the role of lifestyle? NRN-Workshop, Johannes Kepler University, Linz (Austria), November 2010.
- Schneeweis, N., M. Fort and R. Winter-Ebmer: Compulsory schooling and fertility in Europe. Empirical Economics Seminar, Tinbergen Institute, Amsterdam (The Netherlands), April 2010.
- Schneeweis, N., M. Fort and R. Winter-Ebmer: Compulsory schooling and fertility in Europe. NRN-Workshop, Salzburg (Austria), May 2010.
- Schneeweis, N., M. Fort and R. Winter-Ebmer: Compulsory schooling and fertility in Europe. Annual Meeting of the European Society for Population Economics (ESPE), Essen (Germany), June 2010.
- Schneeweis, N., M. Fort and R. Winter-Ebmer: Compulsory schooling and fertility in Europe. Ski & Labor Seminar of the Socioeconomic Institute at the University of Zurich, Engelberg (Switzerland), January 2011.
- Schneeweis, N. and M. Zweimüller: Girls, girls, girls: gender-composition and female school choice. 4th Conference of the Network "The Economics of Education and Education Policy in Europe", Amsterdam (The Netherlands), October 2008.
- Schneeweis, N. and M. Zweimüller: Girls, girls, girls: gender-composition and female school choice. Research Seminar of the Department of Economics, Johannes Kepler University, Neufelden (Austria), December 2008.
- Schneeweis, N., M. Schnalzenberger, R. Winter-Ebmer and M. Zweimüller: Quality of work and retirement. NRN-Workshop, Johannes Kepler University, Linz (Austria), January 2009.
- Schneeweis, N. and M. Zweimüller: Early tracking and the misfortune of being young, Research Seminar at the Department of Human Capital and Innovation, Ifo Institute, Munich, February 2009.
- Schneeweis, N. and M. Zweimüller: Girls, girls, girls: gender-composition and female school choice. Leibniz Seminar on Labour Research, Berlin Network of Labour Market Research, Berlin (Germany), April 2009.
- Schneeweis, N. and M. Zweimüller: Girls, girls, girls: gender-composition and female school choice. Annual Meeting of the Austrian Economic Association (NOeG), Johannes Kepler University, Linz (Austria), May 2009.
- Schneeweis, N. and M. Zweimüller: Early tracking and the misfortune of being young. Annual Meeting of the Austrian Economic Association (NOeG), University of Linz, May 2009.
- Schneeweis, N. and M. Zweimüller: Girls, girls, girls: gender-composition and female school choice. NRN-Workshop, Johannes Kepler University, Linz (Austria), May 2009.

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- Schneeweis, N. and M. Zweimüller: Warum frühe Selektion im Schulsystem ineffizient ist. NRN-Workshop, Bundesministerium für Arbeit, Soziales und Konsumentenschutz, Vienna (Austria), June 2009.
 - Schneeweis, N. and M. Zweimüller: Girls, girls, girls: gender-composition and female school choice. Annual Conference of the European Association of Labour Economists (EALE), Tallinn (Estonia), September 2009.
 - Schneeweis, N. and M. Zweimüller: Early tracking and the misfortune of being young. Annual Conference of the European Association of Labour Economists (EALE), Tallinn, September 2009.
 - Schneeweis, N. and M. Zweimüller: Girls, girls, girls: gender-composition and female school choice. European Conference on Educational Research (ECER), Vienna (Austria), September 2009.
 - Schneeweis, N. and M. Zweimüller: Early tracking and the misfortune of being young. European Conference on Educational Research (ECER), Vienna, September 2009.
 - Schneeweis, N. and M. Zweimüller: Early tracking and the misfortune of being young. Faculty Meeting of the Department of Economics, University of Linz, Neufelden (Austria), December 2009.
 - Schneeweis, N. and M. Zweimüller: Early tracking and the misfortune of being young. Research Seminar, Department of Economics, Stockholm University, Stockholm (Sweden), January 2010.
 - Schneeweis, N. and M. Zweimüller: Frühe Selektion im Schulsystem, mehr Risiken als Chancen? NRN Policy Workshop, Volkshochschule Linz, April 2010.
 - Schneeweis, N. and M. Zweimüller: Warum frühe Selektion im Schulsystem ineffizient ist. Lange Nacht der Forschung, Johannes Kepler University, Linz (Austria), November 2010. (Poster)
 - Schwazer, P.: Determinants of Physician Density. AG-Econometrics Apr. 23, 2008, Innsbruck
 - Schwazer, P.: Entry and Exit in a two-tiered public/private Health Care System AG-Econometrics Dec. 14, 2010, Innsbruck
 - Schwazer, P.: Physician Density in a two-tiered public/private Health Care System. 9th Annual International Conference on Health Economics, Management & Policy, June 28-30, 2010, Athens, Greece
 - Schwazer, P.: Physician Density in a two-tiered public/private Health Care System. 2nd Workshop of the Research Priority Program in Empirical and Experimental Economics, October 28, 2010, University of Innsbruck, Innsbruck
 - Schwazer, P.: Referral or Substitution Effect on Physicians. NRN-Workshop November 6-7 2009, Linz.
 - Staubli, S.: Netspar Pension Workshop, January 2010; „Do Means-Tested Benefits Reduce the Demand for Annuities? Evidence from Switzerland“
 - Staubli, S.: University of Maryland, College Park, October 2010; „The Impact of Stricter Criteria for Disability Insurance on Labor Force Participation“
 - Staubli, S.: NFN Meeting, Linz, November 2010; „The Impact of Stricter Criteria for Disability Insurance on Labor Force Participation“
 - Staubli, S.: University of Basel, Basel, November 2010; „The Impact of Stricter Criteria for Disability Insurance on Labor Force Participation“
 - Staubli, S.: ASSA Annual Meetings, Denver, January 2011; „The Impact of Stricter Criteria for Disability Insurance on Labor Force Participation“
 - Staubli, S.: RAND Corporation, Santa Monica, January 2011; „The Impact of Stricter Criteria for Disability Insurance on Labor Force“ Participation
 - Steinhauer, A.: European Summer Symposium in Labour Economics (ESSLE), Buch am Ammersee, 2010; Titel: „The impact of parental leave rules on labor supply: the role of job protection versus cash benefits“
 - Steinhauer, A.: Micro workshop, University of Lausanne, 2010; Titel: „Leverage and Covariance Matrix Estimation in Finite-Sample IV Regressions“
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- Steinhauer, A.; Doctoral Seminar in Economics, University of Zurich, 2010; Titel: „Leverage and Covariance Matrix Estimation in Finite-Sample IV Regressions“
- Steinhauer, A.; NRN: Labour Economics and the Welfare State Workshop, Johannes Kepler University (JKU), Linz, 2010; Title: „The impact of parental leave rules on labor supply: the role of job protection versus cash benefits“
- Steinhauer, A.; Doktorandenseminar Makroökonomik und Arbeitsmärkte, University of Zurich, 2010; Titel: „The impact of parental leave rules on labor supply: the role of job protection versus cash benefits“
- Steinhauer, A.; Microeconometrics seminar, University of Zurich, 2010; Titel: „Leverage and Covariance Matrix Estimation in Finite-Sample IV Regressions“
- Steinhauer, A.; ZEW Microsimulation Workshop 2010, Mannheim, 2010; Titel: „The impact of parental leave rules on labor supply: the role of job protection versus cash benefits“
- Theurl, E., Internationale Entwicklungstrends in der Finanzierung von Gesundheitsleistungen, Tagung des Arbeitskreis „Sozialversicherung und Wissenschaft „Finanzierungsprobleme der Gesetzlichen Krankenversicherung“, Salzburg (Austria), June 2009.
- Theurl, E., Pflegefinanzierung in Österreich: Bestandsaufnahme und ausgewählte Reformperspektiven aus ökonomischer Sicht, Symposium "WHO CARES?" Pflege und Betreuung in Österreich - eine geschlechterkritische Perspektive, Innsbruck (Austria), May, 2010.
- Weber, A.: Does Female Employment Influence Firm Survival? Evidence from Start-ups. NRN Eröffnungsworkshop
- Weber, A.: Does Female Employment Influence Firm Survival? Evidence from Start-ups. University of California at Berkeley, Labor Lunch
- Weber, A.: Does Female Employment Influence Firm Survival? Evidence from Start-ups. Universität Linz, Habilitationsvortrag
- Weber, A.: Competition and Gender Prejudice: Are Discriminatory Employers Doomed to Fail? Conference on Panel Data
- Weber, A.: Competition and Gender Prejudice: Are Discriminatory Employers Doomed to Fail? Danish Microeconomic Network Meeting
- Weber, A.: Competition and Gender Prejudice: Are Discriminatory Employers Doomed to Fail? NIPE Workshop on Linked Employer Employee Data
- Weber, A.: Clash of Career and Family: Fertility Decisions after Job Displacement. University of Essex, Research Seminar
- Weber, A.: Does Female Employment Influence Firm Survival? Evidence from Start-ups. University of California at Berkeley, Finance Seminar
- Weber, A.: Cash-on-Hand and Competing Models of Intertemporal Behavior: New Evidence from the Labor Market. IAB, Research Seminar
- Weber, A.: Competition and Gender Prejudice: Are Discriminatory Employers Doomed to Fail? University of St. Gallen, Research Seminar
- Weber, A.: Competition and Gender Prejudice: Are Discriminatory Employers Doomed to Fail? Das Berliner Netzwerk Arbeitsmarktforschung (BeNA), Leibniz Seminar
- Weber, A.: Competition and Gender Prejudice: Are Discriminatory Employers Doomed to Fail? Universität Mannheim, Berufungsvortrag
- Weber, A.: Competition and Gender Prejudice: Are Discriminatory Employers Doomed to Fail? Ludwig Maximilian Universität München, Berufungsvortrag
- Weber, A.: Female Hires and the Success of Start-up Firms American Economic Association, Annual Meeting
- Weber, A.: Competition and Gender Prejudice: Are Discriminatory Employers Doomed to Fail? Rand Corporation, Research Seminar
- Weber, A.: Competition and Gender Prejudice: Are Discriminatory Employers Doomed to Fail? Bocchoni University, Mills Seminar

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- Weber, A.: Competition and Gender Prejudice: Are Discriminatory Employers Doomed to Fail? IZA/SOLE Transatlantic Meeting of Labor Economists
 - Weber, A.: Competition and Gender Prejudice: Are Discriminatory Employers Doomed to Fail? European Society of Population Economics (ESPE), Conference
 - Weber, A.: Competition and Gender Prejudice: Are Discriminatory Employers Doomed to Fail? European Society of Labor Economists (EALE/SOLE), Conference
 - Weber, A.: Effekte der Arbeitsmarktpolitik – eine Meta-Analyse. Workshop Arbeitsministerium Wien
 - Weber, A.: Intertemporal substitution in labor force participation: Evidence based on policy discontinuities. European Summer Symposium in Labour Economics (ESSLE)
 - Weber, A.: Intertemporal substitution in labor force participation: Evidence based on policy discontinuities. University of California at Berkeley, Labor Seminar
 - Weber, A.: Intertemporal substitution in labor force participation: Evidence based on policy discontinuities. University of Mannheim, Internal Seminar
 - Weber, A.: Intertemporal substitution in labor force participation: Evidence based on policy discontinuities. RWI Essen, Labor Market Workshop
 - Weber, A.: Intertemporal substitution in labor force participation: Evidence based on policy discontinuities. Frankfurt University, Empirical Economics Seminar
 - Weber, A.: Intertemporal substitution in labor force participation: Evidence based on policy discontinuities. Uppsala University, Research Seminar
 - Weber, A.: Long term effects of job displacement in the 1980's recession in Austria. NRN workshop Linz
 - Weichselbaumer D.: Sex, Gender and Sexual Orientation: Economic Studies on Labor Market Discrimination, 2009, University of the West Indies, Cave Hill, Institute for Gender and Development
 - Weichselbaumer D.: Sex, Gender and Sexual Orientation: Experimente zur Arbeitsmarktdiskriminierung, 2010, Hochschule für Wirtschaft und Recht, Harriet Taylor Mill Institut für Ökonomie und Geschlechterforschung
 - Weichselbaumer D.: The Effect of Sexual Orientation in the Labor Market, 2011, "Gender and Diversity que(e)r gedacht", Universität Köln
 - Winter-Ebmer, R. And A. R. Cardoso: Female-headed firms and wage policies. Annual Meeting of the European Society for Population Economics (ESPE), Essen (Germany), June 2010.
 - Winter-Ebmer R., E. delBono and A. Weber: Clash of Career and Family: Fertility Decisions after Job Displacement. Annual Meeting of the European Society for Populations Economics (ESPE), Seville (Spain), June 2009.
 - Winter-Ebmer R., E. delBono and A. Weber: Clash of Career and Family: Fertility Decisions after Job Displacement. CesIFO, Munich (Germany), May 2010.
 - Winter-Ebmer, R., M. Fort and N. Schneeweis: The impact of education on fertility. University of Stirling, Stirling (UK), October 2010.
 - Winter-Ebmer, R., M. Fort and N. Schneeweis: The impact of education on fertility. Deutsche Akademie der Wissenschaften Leopoldina, Freiburg (Germany), February 2011.
 - Winter-Ebmer, R., M. Fort and N. Schneeweis: The impact of education on fertility. Verein für Sozialpolitik, Ausschuss Bevölkerungsökonomik, Mannheim (Germany), February 2011.
 - Winter-Ebmer, R., W. Frimmel and M. Halla: Marriage Subsidies and Divorce: An Analysis of Marginal Marriages. University of Strathclyde, Strathclyde (UK), October 2010.
 - Winter-Ebmer, R., W. Frimmel and M. Halla: Marriage Subsidies and Divorce: An Analysis of Marginal Marriages. Engelberg Labor Seminar, Engelberg (Switzerland), January 2011.
 - Winter-Ebmer, R., N. Graf and H. Hofer: Labour Supply Effects of a Subsidized Old-Age Part-Time Scheme in Austria. Nationalökonomische Gesellschaft NoeG, Linz (Austria), May 2009
 - Winter-Ebmer, R., N. Graf and H. Hofer: Labour Supply Effects of a Subsidized Old-Age Part-Time Scheme in Austria. Ministry of Labor, Paris (France), October 2010.
 - Wuellrich, Jean-Philippe; HUI-Seminar, University of Zurich, 2008; Titel: „Do Financial Incentives for Firms Promote Employment of Disabled Workers?“
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- Wuellrich, Jean-Philippe; Doctoral Seminar in Economics, University of Zurich, 2008; Titel: „Do Financial Incentives for Firms Promote Employment of Disabled Workers?“
- Wuellrich, Jean-Philippe; Brownbag Seminar at HEC, Department of Econometrics and Political Economy, University of Lausanne, 2008; Titel: „Do Financial Incentives for Firms Promote Employment of Disabled Workers?“ (Invited Talk)
- Wuellrich, Jean-Philippe; Labor Economics Seminar, University of Zurich, Engelberg, 2008; Titel: „Do Financial Incentives for Firms Promote Employment of Disabled Workers?“
- Wuellrich, Jean-Philippe; Doctoral Seminar in Economics, University of Zurich, 2009; Titel: „Do Financial Incentives for Firms Promote Employment of Disabled Workers?“
- Wuellrich, Jean-Philippe; NRN: Labour Economics and the Welfare State Workshop, Johannes Kepler University (JKU), Linz, 2009; Title: „Fatal Attraction? Access to Early Retirement and Mortality“
- Wuellrich, Jean-Philippe; 11th Summer Workshop “New Perspectives in Labour Economics” at the Centre for European Economic Research (ZEW), Mannheim, 2009; Titel: „Do Financial Incentives for Firms Promote Employment of Disabled Workers?“ (Poster)
- Wuellrich, Jean-Philippe; Labor Economics Seminar, University of Zurich, Engelberg, 2010; Titel: „Fatal Attraction? Access to Early Retirement and Mortality“
- Wuellrich, Jean-Philippe; Labor Lunch, MIT Department of Economics, Cambridge, USA, 2010; Title: „Fatal Attraction? Access to Early Retirement and Mortality“
- Zulehner, C.: Competition and gender prejudice: Are discriminatory employers doomed to fail? European Economic Association, Glasgow
- Zulehner, C.: Competition and gender prejudice: Are discriminatory employers doomed to fail? European Association for Research in Industrial Economics, Ljubljana
- Zulehner, C.: Competition and gender prejudice: Are discriminatory employers doomed to fail? Austrian Economic Association, Linz
- Zulehner, C.: Der Effekt von Diskriminierung auf den Erfolg von Unternehmen. Workshop Arbeitsministerium Wien
- Zulehner, C.: Discussion of “Going once... Going twice... What’s the optimal price? Evidence of Sub-optimal Seller Behaviour in Real Estate Auctions” IREBS 2009 Conference on Real Estate Economics and Finance, Regensburg
- Zulehner, C.: Female hires and the success of start-up firms. Annual Meeting of the American Economic Association, Atlanta
- Zulehner, C.: Is fixed-mobile substitution high enough to deregulate fixed voice telephony? Evidence from the Austrian markets. Centre for Industrial Economics Workshop, Copenhagen
- Zulehner, C.: Is fixed-mobile substitution high enough to deregulate fixed voice telephony? Evidence from the Austrian markets. 7th ZEW Conference on the Economics of Information and Communication Technologies, Mannheim
- Zulehner, C.: The impact of innovation and market demand on market structure. Jornadas de Economía Industrial, Madrid
- Zulehner, C.: The impact of innovation and market demand on market structure. IFN Stockholm Conference on Innovation, Ownership and Competition Policy, Vaxholm
- Zulehner, C.: The impact of innovation and market demand on market structure. Workshop of the IO Group of the German Economic Association, Zurich
- Zulehner, C.: The impact of innovation and market demand on market structure. Conference of the Research Network on Innovation and Competition Policy, Wien
- Zulehner, C.: Sticky floors and glass ceilings in top corporate jobs. Workshop on "Women in top corporate jobs - compensation, promotion and firm performance", Aarhus
- Zweimüller, J., OECD Paris, 2008, „ALMPs and the Success of Job Applications“
- Zweimüller, J., Paris School of Economics, 2008, “ALMPs and the Success of Job Applications”
- Zweimüller, J., Tilburg 2008, “Do Financial Incentives for Firms Promote Employment for Disabled Workers?“

- Zweimüller, J., IZA Bonn 2009, “Parental Leave and Return-to-Work Behavior”.
- Zweimüller, J., Tel Aviv University 2009, “Culture and Unemployment: Evidence from the Röstigraben”
- Zweimüller, J., Universität Freiburg 2010, “Culture and Unemployment: Evidence from the Röstigraben”
- Zweimüller, J., CEMFI Madrid 2010, “Fatal Attraction? Access to Early Retirement and Mortality”
- Zweimüller, J., Tinbergen Institute Amsterdam 2010, “Fatal Attraction? Access to Early Retirement and Mortality”

2.3 Thesis Work

Name	Degree	Title	Status
Brunner, Beatrice	lic. oec. publ.	Essays in Labor Economics	in progress
Côme, Roero	Dr.	Sample Selection and Treatment Effect Models	in progress
Eckendorfer, Paul	Mag.	Essays in Optimal Taxation	in progress
Fink, Martina	Mag.	Essays in Labor Economics	in progress
Frimmel, Wolfgang	PhD	Essays in Family Economics	in progress
Gächter, Martin*)	Dr.	Essays on Health Economics	completed
Halmdienst, Nicole	Mag. ^a	The impact of Early life events on health and labor market outcomes	completed
Heim, Andreas	Dr.	Zahlungsdisziplin und Mahnwesen	completed
Horvath, Gerard Thomas	Dr.	Essays in Applied Micro Econometrics	in progress
Hummer, Michael	Mag.	Essays on Health Economics	in progress
Kalkbrenner, Esther	PhD	Essays on Multinational Corporations, Investment and Economic Performance	completed
Hainy, Markus L.	M.Stat.	Efficient MCMC Estimation of Mixed Effects Binary Logit Models	completed

Parolini, Arno	MMag.	The Effects of Incentive Based Policies: Economic Analyses from Various Perspectives	in progress
Rabas, Alexander	Mag.	Not yet decided	in progress
Schnalzenberger, Mario	Dr.	Essays on Applied Econometrics of Aging	in progress
Schneeweis, Nicole	Dr. ⁱⁿ	Essays in Education Economics	completed
Schwazer, Peter	Dr. rer.soc.oec	Essays on Health Economics	in progress
Schwazer, Peter	Mag.	Empirical Analyses of the Physicians Market Evidence from Austria	in progress
Steinhauer, Andreas	B.A.	Essays in Labor Economics	in progress
Strauss, Ulrike	Mag.	to be determined	in progress
Wüllrich, Jean-Philippe	lic. oec. publ.	Essays in Labor Economics	in progress
Zweimüller, Martina	Dr. ⁱⁿ	Essays on the Economics of Education and Gender	completed

*) Martin Gächter reached his PhD sub auspiciis praesidentis rei publicae, Innsbruck, March 2011 which is the highest honor for a PhD student possible in Austria, awarded by the President of the Republic.

2.4 Workshops and Seminar Presentations

2.4.1 NRN Workshops

The bi-annual NRN-workshop was the main vehicle for internal cooperation and information. We managed to keep the schedule twice a year. In the final semester we will hold three workshops: one big final workshop where we cooperate with Labor Economists from Northern Italy (Padova, Venezia and Bologna, Contact Person is Giorgio Brunello and Erling Barth from Oslo) to hold a joint meeting; two other meetings will be held on issues of taxation and experimental labor economics in Vienna. These meetings are somewhat different, because they are more specialised as the usual NRN meetings.

Workshop 1: October 6, 2008, Linz (program below).

Workshop 2: January 30, 2009, Linz (program below).

Workshop 3: May 21, 2009, Linz (program below).

Workshop 4: November 6, 2009, Linz (program below).

Workshop 5: May 20-21, 2010, Salzburg (program below).

Workshop 6: November 18-19, 2010, Linz (program below).

Workshop 7: May 12-13, 2011, Brixen in cooperation with Italian Labor Economists from Padova, Bologna and Venezia (program to be announced).

Workshop 8: April 2011, We also organize a workshop on *Taxation and Redistribution* to be held at the University of Linz. Some of the most active researchers in optimal taxation theory have agreed on their participation. Confirmed speakers are Thomas Aronsson (University of Umea), Helmut Cremer (University of Toulouse), Thomas Gaube (University of Osnabrück), Bas Jacobs (Erasmus University Rotterdam), Laurence Jaquette (Norwegian School of Economics and Business Administration), Lucca Micheletto (Bocconi University Milan)

Workshop 9: July 14-15, 2011 Vienna, Workshop in Experimental Labor Economics (in preparation); List of presenting participants: Jordi Brandts (Barcelona), Alexander Cappelen (NHH Bergen), Gary Charness (UCSC), Uri Gneezy (UCSD), Muriel Niederle (Stanford), Imran Rasul (UCL), Rupert Sausgruber (Innsbruck), Joel Slemrod (Michigan), Bertil Tungodden (NHH Bergen), Jean-Robert Tyran (Vienna)

Program Workshop 1:

- Brunner Beatrice and Kuhn Andreas: Einfluss des Konjunkturzyklus auf das Lohnprofil
- Pamminer Christoph: Bayesian Clustering of Austrian Wage Mobility Data Using Finite Mixtures of Markov Chain Models

- Parolini Arno: Anreizwirkung von Umverteilung in einem experimentellen Arbeitsmarkt
- Weber Andrea and Zulehner Christine: Does female employment influence firm survival? Evidence from start-ups

Program Workshop 2:

- Böheim René and Zweimüller Martina: Trade unions and temporary agency work
- Frimmel Wolfgang, Halla Martin and Winter-Ebmer Rudolf: Marriage subsidies and divorce
- Frühwirth-Schnatter Silvia: Bayesian Clustering NFN-health group: Health screening and obesity in Austria Quality of Work and Retirement
- Schneeweis Nicole, Schnalzenberger Mario, Winter-Ebmer Rudolf and Zweimüller Martina: Quality of Work and Retirement
- Pruckner, Gerald: Health Screening and Obesity in Austria

Program Workshop 3:

- Halla Martin and Zweimüller Martina: The Causal Effect of Health on Income: Quasi Experimental Evidence from Accidents
- Horvath Gerard Thomas, Böheim René and Winter-Ebmer Rudolf: Wage Expectations and Unemployment Duration
- Sausgruber Rupert and Parolini Arno: Take-Up of Tax Refunds
- Schneeweis Nicole and Zweimüller Martina: Girls, girls, girls: gender composition and female school
- Weber Andrea, Fink Martina and Kalkbrenner Esther: Long term effects of job-displacement in the 1980's recession in Austria
- Zweimüller Josef and Lalive Rafael: Do ALMPs increase the success of job applications?

Program Workshop 4:

- Eckerstorfer Paul, Brunner Johann and Pech Susanne: Optimal taxation in an economy where individuals differ in two characteristics and where tax evasion is possible
- Gächter Martin, Peter Schwazer, Theurl Engelbert and Winner Hannes: Physician Competition and location decision: Evidence from the private sector of a two-tiered health care system
- Halla Martin, Josef Zweimüller and Alexander Wagner: The Effect of Immigration on Political Outcomes

- Kalkbrenner Esther, Martina Fink, Andrea Weber and Christine Zulehner: Firm demographics and dynamics in Austria: A worker flow approach based on administrative linked employer-employee data
- Roero Come: Sample selection and treatment models in a Bayesian approach
- Sommerfeld Katrin, Bernd Fitzenberger and Dirk Antonczyk: Rising Wage Inequality, the Decline of Wage Bargaining, and the Gender Wage Gap
- Wuellrich Jean-Philippe, Zweimüller Josef and Kuhn Andreas: Early Retirement and Mortality

Program Workshop 5:

- Winter-Ebmer Rudolf: Introduction
- Schneeweis Nicole: The causal effect of education on fertility: Evidence from school leaving laws (with Margherita Fort and Rudolf Winter-Ebmer)
- Brunello Giorgio: Training subsidies and the wage returns to continuing vocational training: Evidence from Italian regions” (with Simona Comi and Daniela Sonedda)
- Pech Susanne: Optimal taxation of bequests in a model with initial wealth (with Johann K. Brunner)
- Sausgruber Rupert: Effort externalities in the workplace
- Oberhofer Harald: Post-acquisition employment growth of acquired European firms
- Fitzenberger Bernd: The heterogeneous effects of training incidence and duration on labor market transitions (with Aderonke Osikominu and Marie Waller)
- Pamminer Christoph: Entrants in the Austrian labor market: A Bayesian analysis
- Weber Andrea: Intertemporal substitution in labor force participation: Evidence based on policy discontinuities” (with Day Manoli)
- Frimmel Wolfgang: Marriage Subsidies and Divorce: An Analysis of Marginal Marriages (with Martin Halla and Rudolf Winter-Ebmer)

Program Workshop 6:

- Böheim René: Moral hazard and sickness absence
- Eckersdorfer Paul: Optimal taxation of commodities with positional externalities
- Kalkbrenner Esther: Acquired versus Non Acquired Subsidiaries: Which Entry Mode do Parent Firms Prefer?
- Schnalzenberger Mario: The causal effect of income on health: Investigating a policy reform in Austria
- Schneeweis Nicole: Education and Health: What is the role of lifestyle?
- Staubli Stefan: Employment disincentives of disability insurance

- Steinhauer Andreas: The impact of parental leave rules on labor supply: the role of job protection versus cash benefits

2.4.2 Other Workshops

Johann K. Brunner and Gerald J. Pruckner were organizers of the Annual Congress of the Austrian Economic Association (NOEG) held in Linz in May 2009. There were about 100 participants at this conference. The general topic of the conference was “Labor markets, inequality and the welfare state”. The invited speakers were David Card from the University of California, Berkeley (“Immigration and Inequality”), Eddy van Doorslaer from the Erasmus University of Rotterdam (“Socio-economic differences in health over the life cycle”), and Giacomo Corneo from the Free University of Berlin (“Income concentration: theory and evidence”). The general topic of the conference was motivated by the close relation to our NRN research.

Active participation and involvement in the yearly Engelberg labor workshop which takes place in Engelberg/Switzerland.

2.4.3 Seminar Presentations at Linz, Innsbruck and Zurich

- Becker Sascha, University of Stirling: The Institutional Legacy of the Habsburg Empire. October 2008.
- Wagner Martin, Institut für Höhere Studien: Nonlinear Cointegration Analysis and the Environmental Kuznets Curve. October 2008.
- Rainer Helmut, University of St. Andrews: Unintended Consequences of Welfare Reform: The Case of Divorced Parents. November 2008.
- Walther Herbert, WU Wien: International Comparisons of Household Saving Rates and Hidden Income. December 2008.
- Zulehner Christine, University of Vienna (as of then): The Impact of Market Demand and Innovation on Market Structure. December 2008.
- Fabel Oliver, University of Vienna: Recruitment of Seemingly Overeducated Personnel: Insider-Outsider Effects on Fair Employee Selection Practices. December 2008.
- Mayr Karin, University of Linz: Brain Drain, Brain Return and Education: The Effects of Eastern-Western European Migration. December 2008.
- Köthenbürger Marco, University of Vienna: How do local governments decide on public policy in fiscal federalism? Tax vs. expenditure optimization. December 2008.
- Angrist John, MIT. Jan. 14, 2009.
- Brücker Herbert, University of Bamberg: Migration and Wage Setting: Reconsidering the Labour Market Effects of Immigration. January 2009.
- Knell Markus and Alfred Stiglbauer, Österreichische Nationalbank: The Impact of Reference Norms on Inflation Persistence when Wages are staggered. January 2009.
- Kauermann Göran, University of Bielefeld. April 22, 2009.
- Zehnder Christian, University of Lausanne, April 23, 2009
- Felder Stefan, University Duisburg Essen, May 27, 2009
- Brunello Giorgio, University of Padua: The Causal Effect of Education on the BMI of European Females. May 2009.
- Francesconi Marco, University of Essex: A Dynamic Model of Birth Weight. May 2009.

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- van Ours Jan, University of Tilburg: Government Revenues and Economic Growth in Weakly Industrialized States. May 2009.
 - Manoli Dayanand, University of Los Angeles: Risk Aversion & Retirement Decisions: Using Policy Variation to Identify and Estimate a Structural Model of Retirement. June 2009.
 - Fletcher Jason, University of Yale: The Effect of Classmate Characteristics on Individual Outcomes: Evidence from the Add Health. July 2009.
 - Schnitzer Monika, University of Munich: Financial Constraints and Innovation: Why poor countries don't catch up. October 2009.
 - Palley Thomas, New America Foundation, Washington: The Economic of the Phillips Curve: Formation of Inflation Expectations versus Incorporation of Inflation Expectations. November 2009.
 - Meier Volker, University of Vienna: Taxation of Interest and Savings with Migration. January 2010.
 - Moser Christoph, ETH Zurich: The Skill Structure of the Export Wage Premium: Evidence from German Manufacturing. January 2010.
 - Borck Rainald, University of Passau: Political economy of higher education finance. April 2010.
 - Huber Martin, University of St. Gallen: Does leaving Welfare Improve Health? Evidence from Germany. April 2010.
 - S  ve-S  derbergh Jenny, University of Stockholm: Girls will be Wirls – Especially among Boys: Competitive Behavior in the “Daily Double” on Jeopardy. April 2010.
 - Fabbri Francesca, Ludwig-Maximilian-University Munich: CEO Pay in Germany: A Panel Analysis for 1977-2008. October 2010.
 - Keuschnigg Christian von der Universit  t St. Gallen, Oct. 20, 2010.
 - Egger Peter, ETH Zurich: Regression-Discontinuity Models (Generalized Designs with Heterogeneous Treatment Effect). December 2010.
 - Rainer Helmut, University of Munich: Sex or the City. December 2010.
 - Mayr Karin, University of Vienna: Directed technological change, unemployment and brain drain. December 2010.
 - Tyran Jean-Robert, University of Copenhagen: The demand for discrimination. December 2010.
 - Hill Robert, Karl-Franzens Universit  t Graz: Hedonic Price-to-Rent Ratios for Housing: Implications for the Detection of Departures from Equilibrium. March 2011.
 - Roos Michael, Ruhr Universit  t Bochum: An Experimental Test of the Microfoundations of the Calvo Phillips Curve. March 2011.
 - Moeltner Klaus, University of Nevada, June 3, 2009
 - Kooreman Peter, University of Tilburg, June 24, 2009
 - Kilger Doron, University of Haifa Oct 14, 2009
 - Wiesen Daniel, University of Bonn, Oct. 21, 2009
 - Chilton Susan, University of Newcastle, Nov 25, 2009
 - Traub Stefan, University of Bremen. Dec 2, 2009
 - Le Gallo Julie, CRESE, Universit   de Franche-Comt  . Jan. 20, 2010.
 - Fadinger Harald, University of Vienna. April 21, 2010.
 - Engelmaier Florian, University of Munich, April 28, 2010.
 - Rincke Johannes, University of Munich, May 19, 2010.
 - Schauer Georg, University of Tennessee, May 26, 2010.
 - Costa Gomez Miguel, University of Aberdeen, May 27, 2010.
 - Limbrock Frank, Yale University, June 9, 2010.
 - M  ltner Klaus, University of Nevada, Reno, June 23, 2010.
 - W  rz Julia,   sterreichische Nationalbank OeNB, Nov. 3, 2010.
 - Winter Joachim, Universtiy of Munich. Nov. 10, 2010.
 - Jonas Eva, University of Salzburg, Dec. 2010
 - Nowotny Klaus, WIFO Vienna. Jan. 12, 2011
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- Arguedas Carmen (Universidad Autónoma de Madrid), Jan. 19, 2011.
- Ebersberger Bernd , Management Center MCI Innsbruck, Nov. 17, 2010
- Dustmann Christian; University College London; March 10, 2010; Seminar Talk
- Garcia-Penalosa Cecilia; Groupement de Recherche en Économie Quantitative d'Aix-Marseille (GREQAM); October 2010; Seminar Talk
- Holden Steinar; University of Oslo; March 2010; Seminar Talk
- Michaels Guy; London School of Economics; October 22, 2008; Seminar Talk
- Hendrik Jürges (Schumpeter School of Business and Economics, University of Wuppertal), April 2011.
- van Ours Jan; Tilburg University; February 2009; Seminar Talk
- von Wachter Till; Columbia University; May 25, 2009; Seminar Talk
- Badinger Harald, WU Wien: Spacey parents versus spacey hosts of FDI, 14.01.2010
- Fahrmeir Ludwig, Ludwig-Maximilians-University, Munich: Bayesian Smoothness and Shrinkage Priors in Regression, 06.11.2008
- Jacobi Liana, University of Melbourne: Climbing the Drug Staircase: A Bayesian Analysis of the Initiation of Hard Drug Use, 08.01.2009
- Steel Mark F., University of Warwick: Time Dependent Stick-Breaking Processes, 22.10.2009
- Taddy Matt, Chicago Booth School of Business: Dynamic Trees for Learning and Design, 11.03.2010
- Tutz Gerhard, LMU München: Vom Umgang mit kategorialen Prädiktoren – Selektion und Clustering, 16.06.2011
- Zeileis Achim, Universität Innsbruck: Model-based regression trees in economics and the social sciences, 17.03.2011

2.5 National and International Cooperation

Local Contact	Partner	Institution
Böheim, René	Muehlberger, Ulrike	WIFO Austria
Böheim, René	Lackner, Mario	University of Linz
Böheim, René; Halla, Martin	Francesconi, Marco	University of Essex
Brunner, Johann	Winner, Hannes	University of Salzburg
Frühwirth-Schnatter, Sylvia	Frühwirth, Rudolf	ÖAW, Institut für Hochenergiephysik
Frühwirth-Schnatter, Sylvia	Held, Leo	University of Zürich
Frühwirth-Schnatter, Sylvia	Wagner, Helga	University of Linz
Frühwirth-Schnatter, Sylvia	Jacobi, Liana	University of Melbourne
Hummer, Michael	Piribauer, Franz	International Screening Committee for Austria
Lalive, Rafael	Brügger, Beatrice	University of Lausanne
Mayr, Karin	Peri, Giovanni	University of California
Pamminger, Christoph	Tüchler, Regina	WKO, Wirtschaftskammer Österreich
Pruckner, Gerald	van Doorslaer, Eddy	University of Rotterdam
Pruckner, Gerald	Concin, Hans	Institute for social and preventive medicine
Sausgruber, Rupert	Pätzl, Fabian	University of Bremen
Sausgruber, Rupert	Traub, Stefan	University of Bremen
Sausgruber, Rupert	Tyran, Jean-Robert	University of Vienna
Staubli, Stefan	Büttler, Monika	University of St. Gallen

Staubli, Stefan	Engler, Monika	University of St. Gallen
Staubli, Stefan	Inderbitzin, Lukas	University of St. Gallen
Staubli, Stefan	Peijnenburg, Kim	Tilburg University
Theurl, Engelbert	Alexander, Dzien	Medical Centre Innsbruck
Theurl, Engelbert	Christine, Dzien	Medical Centre Innsbruck
Theurl, Engelbert	Monika, Lechleitner	TILAK
Theurl, Engelbert	Andrea, Leiter	University of Innsbruck
Weber, Andrea	Manoli, Dayanand	UC Los Angeles
Weber, Andrea	Mullen, Kathleen	RAND Corporation
Weber, Andrea	Card, David	UC Berkeley
Weber, Andrea	Kluve, Jochen	RWI Essen
Weber, Andrea	del Bono, Emilia	ISER, University of Essex
Weber, Andrea	Chetty, Raj	Harvard University
Weichselbaumer, Doris	Becker, Sascha O.	University of Warwick
Weichselbaumer, Doris	Brandts, Jordi	CSIC
Weichselbaumer, Doris	Fernandes, Ana	University of Bern
Weichselbaumer, Doris	Schneebaum, Alyssa	UMass Amherst
Weichselbaumer, Doris	Schwieren, Christiane	University of Heidelberg
Winter-Ebmer, Rudolf	Brunello, Giorgio	University of Padova
Winter-Ebmer, Rudolf	Fort, Margherita	University of Bologna
Winter-Ebmer, Rudolf	Tatsiramos, Konstantin	IZA Bonn
Winter-Ebmer, Rudolf	del Bono, Emilia	Essex University
Winter-Ebmer, Rudolf	Ichino, Andrea	University of Bologna
Winter-Ebmer, Rudolf	Schwerdt, Guido	CESifo Munich
Winter-Ebmer, Rudolf	Cardoso, Ana Rute	University Aut. Barcelona
Winter-Ebmer, Rudolf	Börsch-Supan, Axel	MEA Mannheim
Winter-Ebmer, Rudolf	Weber, Guglielmo	University of Padova
Winter-Ebmer, Rudolf	Wirnsberger-Roller, Regina	Medical University Graz
Winter-Ebmer, Rudolf	Stiglbauer, Alfred	Austrian Central Bank
Winter-Ebmer, Rudolf	Wernhardt, Georg	University of Vienna
Zweimüller, Josef	Boone, Jan	Tilburg University
Zweimüller, Josef	Falk, Armin	University of Bonn
Zweimüller, Josef	Halla, Martin	University of Linz
Zweimüller, Josef	Schlosser, Analia	Tel-Aviv University
Zweimüller, Josef	van Ours, Jan	Tilburg University
Zweimüller, Josef	Wagner, Alexander	University of Zürich

2.6 Research Visits

2.6.1 Outgoing

Researcher	Time	Research Institution
Böheim, René	October 2009	University of Essex
Böheim, René	January 2011	Ifo Institute, Munich

Frühwirth-Schnatter, Sylvia	December, 2008	Einaudi Institute for Economics and Finance (EIEF), Rome, Italy,
Frühwirth-Schnatter, Sylvia	November, 2008	Center for Research in Statistical Methods (CRiSM), University of Warwick, UK
Frühwirth-Schnatter, Sylvia	November, 2009	Goethe-Universität, Fachbereich Wirtschaftswissenschaften, Frankfurt/Main, Germany
Frühwirth-Schnatter, Sylvia	May, 2009	Econometrics Institute, Rotterdam, The Netherlands
Frühwirth-Schnatter, Sylvia	April, 2011	Booth School of Business, University of Chicago, US
Gächter, Martin	July - August 2009	Queensland University of Technology, Brisbane
Halla, Martin	February - September 2009	Department of Economics, University of California at Berkeley
Halla, Martin	Sep.10	Department of Economics, National Taiwan University
Horvath, Gerard Thomas	May 2010	IZA Summer School, Buch at the Ammersee lake, Germany
Kalkbrenner, Esther	January - April 2010	UC Berkeley, USA
Parolini, Arno	August, 24-30 2009	University of Adelaide
Sausgruber, Rupert	September 1-30, 2010	University of Michigan
Sausgruber, Rupert	March-April 2009	University of Bremen
Sausgruber, Rupert	February - July 2008	University of Copenhagen
Schneebaum, Alyssa	June 2010	Harriet Taylor Mill Institut, Hochschule für Wirtschaft und Recht, Berlin
Weber, Andrea	January - May 2009	UC Berkeley, USA
Weber, Andrea	February 2010	UC Berkeley, USA
Weber, Andrea	February 2010	UCLA, USA
Weber, Andrea	Sep.10	UC Berkeley, USA
Winter-Ebmer, Rudolf	February 2008	Brisbane Institute of Technology
Winter-Ebmer, Rudolf	March 2009	UC Berkeley
Wuellrich, Jean-Philippe	August 2010 - December 2010	Massachusetts Institute of Technology (MIT), Cambridge, USA
Zulehner, Christine	February 2009	UC Berkeley, USA
Zulehner, Christine	February 2009	Purdue University, USA
Zulehner, Christine	Aug.10	RWI Essen, Deutschland
Zulehner, Christine	February 2011	Universität Mannheim, Deutschland
Zweimüller, Josef	April 2010 - May 2010	Aix-Marseille University
Zweimüller, Josef	May 2009	Tel-Aviv University

2.6.2 Incoming

- Schneebaum Alyssa, UMass Amherst, 1 month stay at Harriet Taylor Mill Institut für Ökonomie und Geschlechterforschung, Juni 2010, Cooperation with Doris Weichselbaumer: Preparation of an experiment to investigate discrimination based on sexual orientation
- Tyran Jean-Robert (University of Copenhagen): Research Visit at the University of Innsbruck. Jan. 8-22. 2010. Cooperation with R.Sausgruber.
- Jacobi Liana, Department of Economics, University of Melbourne, visiting the Department of Statistics, September 5 – October 1, 2010
- Brunello Giorgio, University of Padova, May 2009, research cooperation, participation at NRN workshop
- Card David, UC Berkeley, May 2009, participation at NRN Workshop
- Del Bono Emilia (ISER University of Essex), December 2009
- Card David (UC Berkeley), April 2010
- Marco Francesconi, Essex, December 2010
- Konstantin Tatsiramos, Bonn, April and May, 2011
- Manoli Day (UCLA), June 2010
- Manoli Day (UCLA), December 2010
- Mullen Kathleen (RAND), December 2010
- Del Bono Emilia (ISER University of Essex), March 2011
- Manoli Day; University of California – Los Angeles; June, 2009;
- Mullen Kathleen; RAND Corporation; June, 2009;
- Schlosser Analia; Tel-Aviv University; September, 2010;

2.6.3 PhD Courses

- Tatsiramos Konstantin, IZA Bonn, April and May, 2011 Linz, Labor Economics course for the PhD program.
- Dustmann Christian; University College London; May 9-11 Zurich, 2011; PhD-Course „Topics in Migration“
- Angrist Joshua, MIT, January 14-15 2010, Innsbruck, Lectures on Empirical Strategies in Labor Economics

3 Public Outreach, Newspaper, etc.

A main vehicle for public outreach were three policy workshops (two in Vienna, one in Linz) where we presented policy-oriented material to policy-makers, bureaucrats and members of the general public. All the workshops had a fairly high audience (appr. 30-50 persons) and were very well received. Main policy actors at the public servant level could be reached.

a) Public Presentations

- Hummer, M., G.J. Pruckner and E. Theurl, presentation of research results (NRN Health group), Institute for social and preventive medicine, Bregenz, August 2, 2010.
- Pruckner, G.J., presentation of research results (NRN Health group), Oberösterreichische Gebietskrankenkasse, October 29, 2010.
- Pruckner, G.J., presentation of research results (NRN Health group), Landessanitäts-direktion, December 2, 2010.
- Pruckner, G.J., Wie lange können wir uns unser Gesundheitssystem noch leisten? Treffen der österreichischen KlinikleiterInnen, Rosenhügel Wien, October 15, 2010.
- Pruckner, G.J., Wie lange können wir uns unser Gesundheitssystem noch leisten? Kepler Salon Linz, January 31, 2011.
- Annual Meeting of the Austrian Economic Association, cooperating partner, Guest-speakers David Card (UC Berkeley), Linz, 2009.
- FWF presentation, Aging, Vienna, July 2, 2009.
- Kick-Off-Meeting Research Network: Christian Dustmann (UCL), October 2008.
- Österreichische Interdisziplinäre Plattform für Alterungsforschung (ÖIPF), March 15, 2010.
- Participation at “Long Night of Research” of the University of Linz with several presentations, November 2010.
- Policy Workshop 1: Half-day Policy-Paper Presentation, Ministry of Labor and Social Affairs, Vienna, June 19, 2009 (program below).
- Policy Workshop 2: Half-day Policy-Paper Presentation, Linz, April 19, 2010 (program below).
- Policy Workshop 3: Half-day Policy-Paper Presentation, Ministry of Labor and Social Affairs, Vienna, January 2011 (program below).
- Winter-Ebmer, Presentation about aging, Kepler Salon Linz, March 2011.

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- Workshop on Ageing and Retirement, full day, Vienna, May 30, 2011 (program to be announced).
 - Brunner J. K., „Arbeiten bis 70 oder bis zum Umfallen?“, Montagsvorlesung JKU Linz, 14.1.2008.
 - Brunner J. K., „Finanzierungsaspekte der Pflege“, Workshop „Zwischen Krankenhaus und daHeim“, forte, Linz, 7.5.2009.
 - Brunner J. K., „Pensionsantrittsalter und öffentliches Pensionssystem: einige Überlegungen und Simulationen für Österreich.“, Internationaler Workshop „Anreize und Maßnahmen zur Anhebung des faktischen Pensionsantrittsalters“ im Bundesministerium für Arbeit, Soziales und Konsumentenschutz, Wien, 18.6.2010.
 - Brunner J. K., „Steuern auf Kapitaleinkommen und Vermögen“, Economic Policy Forum, Graz Schumpeter Center, 25.11.2010.
 - Brunner J. K., „Die Rolle vermögensbezogener Steuern im Optimalsteuermodell“, WIFO Public Lecture, Wien, 17.2.2011.

Program Policy Workshop 1, Vienna:

- Halla Martin and Zweimüller Martina: Der Einfluss von Arbeitsunfällen auf die spätere Erwerbskarriere
- Pruckner Gerald, Halla Martin, Hummer Michael and Hackl Franz: Zur gesundheitspolitischen Relevanz von Vorsorgeuntersuchungen
- Schnalzenberger Mario and Winter-Ebmer Rudolf: Evaluation des Malusystems bei der Sozialversicherung von älteren Personen
- Schneeweis Nicole and Zweimüller Martina: Warum frühe Selektion im Schulsystem ineffizient ist.
- Winter-Ebmer Rudolf, Ichino Andrea, Schwerdt Guido and Zweimüller Josef: Firmenschließungen in Österreich: langfristige Auswirkungen auf Einkommen, Beschäftigung und Fertilität.

Program Policy Workshop 2, Linz:

- Böheim René, Schneeweis Nicole and Wakolbinger Florian: Betriebliche Weiterbildung in Österreich: Wer profitiert davon?
- Halla Martin and Zweimüller Martina: Macht Krankheit arm? - Evidenz auf Basis von Wegunfällen.

- Hummer Michael, Halla Martin, Pruckner Gerald and Hackl Franz: Was kostet uns ein ungesunder Lebensstil? - Der Zusammenhang von Gesundheitsindikatoren und Gesundheitsausgaben.
- Schnalzenberger Mario and Winter-Ebmer Rudolf: Kann man durch Strafzahlungen die Beschäftigung älterer Mitarbeiter sichern?
- Schneeweis Nicole und Zweimüller Martina: Frühe Selektion im Schulsystem, mehr Risiken als Chancen?

Program Policy Workshop 3, Vienna:

- Hummer Michael: Einmal krank – immer krank? Der Zusammenhang von Geburtsgewicht und Gesundheit
- Weber Andrea: Effekte der Arbeitsmarktpolitik – eine Meta-analyse
- Winter-Ebmer Rudolf: Sind Kinder und Karriere in Österreich vereinbar?
- Zulehner Christine: Der Effekt von Diskriminierung auf den Erfolg von Unternehmen
- Zweimüller Josef: Wer rastet, der rostet: Der Effekt von Frühpension auf die Mortalität

b) Newspapers and magazines

- „Die Gefahr der Frühpensionierung“, NZZ (Switzerland), September 2010
- „Die ökonomischen Mysterien des Röstigrabens“, Handelsblatt (Germany), September 2009 (referring to the project „Does Culture Affect Unemployment? Evidence from the Röstigraben.“)
- „Eerder met pensioen, ook eerder dood“, NRC Handelsblad (Netherlands), November 2010
- „Fatal Attraction? Early Retirement and Mortality“, VoxEU (<http://www.voxeu.org>), 2011
- „Früh in Rente, früh ins Grab“, Handelsblatt (Germany), November 2010 (referring to the project „Fatal Attraction? Early Retirement and Mortality“)
- „Mehr Arbeitslose in der Romandie: Ist die Mentalität schuld?“, Basler Zeitung (Switzerland), July 2009
- „Mindestlohn nicht zwingend schlecht“, Landbote (Switzerland), January 2011
- „Romands verharren länger in der Arbeitslosigkeit“, Tagesanzeiger (Switzerland), September 2010
- Die ökonomischen Mysterien des Röstigrabens. Handelsblatt, September 2009.
- Diskriminierung: Wie sich Gleichberechtigung im Wettbewerb auszahlt. Handelsblatt, January 2010.
- Dustman Interview. Oberösterreichische Nachrichten, October 2008.

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- Geburten in der Krise: Sparen statt Windeln wechseln. Wiener Zeitung, November 2009.
 - Getrennt besser rechnen. Der Standard, August 2010
 - Großprojekt für Linzer Forscher. Österreichische Nachrichten, December 2007.
 - Hackl, F., M. Halla, and G.J. Pruckner, Warum wir uns freiwillig engagieren? Neue Zürcher Zeitung, March 06, 2010.
 - Hackl, F., M. Halla, M. Hummer and G.J. Pruckner, Übergewicht ist teuer, Volksblatt, April 21, 2010.
 - JKU-Volkswirte sind Top. Oberösterreichische Nachrichten, October 2008.
 - Job & Kind: Kündigung kappt Kinderwunsch. Der Standard, February 2010.
 - Jüngere Kinder vom Schulsystem benachteiligt. Dissertation der Woche: Die Presse am Sonntag, September 2009.
 - Karriere und Kind? – Kündigung beeinflusst Kinderwunsch. Campus News JKU, November 2009.
 - Kickoff Meeting 2008. Die Presse / ORF, October 2008.
 - Kündigung „vertreibt“ Kinderwunsch. Gema, September 2010.
 - Kündigung und Familienplanung. Oberösterreichische Nachrichten / ORF / Handelsblatt / Kleine Zeitung / Salzburger Nachrichten / Kurier / Science Blog, August 2009.
 - Linzer Studie empfiehlt Geschlechtertrennung. Salzburger Nachrichten, August 2010.
 - Linzer Studie: Mädchen und Buben getrennt unterrichten. Oberösterreichische Nachrichten, August 2010
 - Österreich ist sozial gerecht – aber nicht immer. Wiener Zeitung, January 2011.
 - Pruckner, G.J., Finanzierungsprobleme im Österreichischen Gesundheitswesen, Oberösterreichische Nachrichten, October 8, 2010.
 - Pruckner, G.J., Was kostet ein Mensch? Wirtschaftsmagazin atello, July 2010.
 - Rechnen im getrennten Unterricht. Kronen Zeitung, August 2010
 - Schneeweis, N. and M. Zweimüller, Getrennt besser rechnen, Der Standard, August 30, 2010.
 - Schneeweis, N. and M. Zweimüller, Linzer Studie empfiehlt Geschlechtertrennung, Salzburger Nachrichten, August 30, 2010.
 - Schneeweis, N. and M. Zweimüller, Linzer Studie: Mädchen und Buben getrennt unterrichten, Oberösterreichische Nachrichten, August 30, 2010.
 - Schneeweis, N. and M. Zweimüller, Rechnen im getrennten Unterricht, Kronen Zeitung, August 31, 2010.
 - Schneeweis, N. and M. Zweimüller, Studie: Mädchen lernen alleine besser Mathe, Österreich, August 30, 2010.
 - Schneeweis, N. and M. Zweimüller, Untereinander entfalten sich die Mädchen einfach besser, Kronen Zeitung, September 1, 2010.

- Studie: Mädchen lernen alleine besser Mathe. Österreich, August 2010
- Übergewicht ist teuer. Volksblatt, April 2010.
- Ungerechtes Bildungssystem. JKU Univationen, October 2010.
- Untereinander entfalten sich die Mädchen einfach besser. Kronen Zeitung, September 2010
- Volkswirte auf Abwegen. APA Journal Forschung, January 2008.
- Weiterbildung bringt Mitarbeitern höhere Löhne. Oberösterreichische Nachrichten, April 2010.
- Versicherungsmathematik als Störenfried, NZZ, März 2011.

c) Radio

- Life Radio Beitrag, August 2010
- LT1: Campus News, September 2010
- „Jobs für Behinderte als Pflicht“ (radio interview), SF DRS 1 (Switzerland), November 2010
- Radio Oberösterreich Stammtisch, September 15, 2010
- Schneeweis, N. and M. Zweimüller, Mädchen und Buben getrennt unterrichten, LT1 Campus News, September 2010.
- Schneeweis, N. and M. Zweimüller, Mädchen und Buben getrennt unterrichten, Radio Oberösterreich Stammtisch, September 15, 2010.

4 Subproject Reports

4.1 Coordination

In the coordination project we provided basic support to all groups. Specific tasks were web-site design, data management, support in super-computing, conference organization and support for the setup of teaching. The main task was to provide the Subprojects with access to the Austrian Social Security Database (ASSD), to maintain it, to replenish it and “translate” the administrative structure of the data base into a structure useful to statisticians and economists – as well as to provide and merge auxiliary data sources.

4.1.1 Report and activities

The web-site www.labornrn.at provides all necessary information for the group and the academic public. We established a working paper series, which is listed in the SSRN and RePEc network and is achieving high download numbers. Moreover, we established an internal wiki to facilitate internal communication, in particular concerning data issues.

We organized a bi-annual workshop, which served the purpose well to increase cooperation between the members of the network and to provide the possibility for critical discussion of research at a very early stage (see the program of the workshops in 2.4.1 of the report). These workshops are complemented by three final workshops in May/June/July 2011.

We also organised a policy-oriented workshop each year, held either at the Ministry of Social Affairs in Vienna or in the City of Linz. These workshops served several goals: on the one hand, the Network produced many important results, which are important for policy-makers; therefore, public presentations are worthwhile and necessary. For the scientists themselves, a close interaction and discussion with public servants and decision makers is very interesting and also necessary to understand policy measures and initiatives better in a larger context. On other hand, many results are also interesting for a more general public and the media. The three workshops were a great success; we reached a large group of decision makers. See a) for other public outreach presentations of the Network and b) for media reports.

Moreover, the Network organized the Annual Meeting of the Austrian Economic Association in May 2009; the general theme of the conference was “Labor Markets, Inequality and the Welfare State”. There were about 100 participants at this conference. The invited speakers were David Card from the University of California, Berkeley (“Immigration and Inequality”), Eddy van Doorslaer from the Erasmus University of Rotterdam (“Socio-economic differences in health over the life cycle”), and Giacomo Corneo from the Free University of Berlin (“Income concentration: theory and evidence”).

The coordination project was also instrumental in arranging seminar lectures (see 2.4.3) and short teaching courses at the PhD level with Josh Angrist, Christian Dustmann and Konstantin Tatsiramos (see 2.6.3).

4.1.2 Available infrastructure

As far as computing and storage capacities are concerned all members of the NRN were offered access to mainframe capacities of the University of Linz which guaranteed also an unrestricted access to the Austrian Social Security Database (ASSD). Concerning supercomputing facilities the Coordination Project provided sustainable storage capacities for the NRN in form of a Dell PowerEdge 2900 III which offered sufficient hard disc storage capacities for the ASSD and the ongoing empirical analysis of project members. Internet connections turned out to be of acceptable speed to allow a convenient access of the NRN members to the NRN mainframe resources. With increasing user requirements and additional hard and software options (see the replacement investment of supercomputing facilities below) a reinvestment of the storage facilities will probably be necessary for the future. In addition to the supercomputer SGI Altix 3000 (shared memory system) the Coordination Project was successful to offer the project members also access to the faster Austrian-Grid Computer Altix ICE 8200 (clustered memory) which enabled for less memory intense Stata jobs much faster execution times.

For this Austrian-Grid Altix ICE 8200 the Coordination Project has invested into a new STATA multi processor version (STATA MP64) for x86-64 architecture, which should also be applicable for new generations of supercomputing resources within the NRN. As both available supercomputers for the NRN - the SGI Altix 3000 and the Altix ICE 8200 – are approaching the end of their product life cycle supercomputing resources at the JKU have to be reinvested within the next year(s). As the empirical research within the NRN occupies about 10 % of the JKU supercomputing facilities the Coordination Project is closely involved into the procurement process at the JKU (lobbying, survey of demand, benchmarks, ...) to pursue a follow-up computer for the SGI Altix 3000 in order to guarantee the long-term availability of supercomputing facilities for the NRN.

4.2 Aging

We studied aging from the workers', the firms' and the society's perspective. Major accomplishments concern the study of early retirement after job loss, evaluations of a subsidized old-age part-time scheme and the impact of a layoff tax on the employment of elderly workers, where we explore substitution strategies of firm in some detail. Moreover, we decompose earnings into firm and worker components to test, whether elderly workers set (due to overconfidence or misperceptions) reservation wages too high. Using data from SHARE (Survey of Health, Ageing and Retirement in Europe) we study retirement behaviour of European workers in relation to the "quality" of their previous job. In collaboration with other subprojects we analyze issues in the realm of population economics (in particular, family formation and fertility), gender issues, as well as, questions related to health, the entry into the labor force and education. From these (ongoing) projects, already 13 papers are published in refereed journals so far.

4.2.1 Results and Discussion

Our aim was to study aging from the perspective of the worker, the firm and society.

4.2.1.1 Aging from the perspective of workers

In longstanding cooperation with Andrea Ichino (Bologna), Guido Schwerdt (Munich) and Josef Zweimüller (Zürich) we explore the employability of elderly workers using a quasi-experimental situation after firm breakdown. Schwerdt, Ruf, Ichino, Zweimüller and Winter-Ebmer (2010) show that post-displacement outcomes for white-collar workers are very different from those of blue-collar workers. In the short run earnings and employment losses are substantial for both groups, but stronger for white-collar workers. In the long run, there are only weak effects for blue-collar workers, but strong and persistent effects for white-collar workers. Moreover, workers losing their jobs after age 50 or 55 initially lose a lot in terms of employment rates, but their employment rates catch-up after several years relative to workers in a control group (Ichino, Schwerdt, Winter-Ebmer, Zweimüller, 2011); this puzzle can be explained by (too) easy access to early retirement, whereas unemployment benefits or severance pay schedules do not play a major role. This line of research will again be taken up in the new proposal where we collaborate with Konstantin Tatsiramos (IZA, Bonn), as well as with the Subproject ECONOMETRICS.

Another, very innovative application – but unrelated to aging – concerned the impact of plant closure on fertility (cooperation with the Subproject LABOR MARKET POLICY and POPULATION ECONOMICS). Del Bono, Weber and Winter-Ebmer (2011) show that unexpected career interruptions can lead to postponed and finally reduced fertility decisions of career-oriented women, whereas no effect for blue-collar women is found. We explain these results with the help of a model of firm-specific human capital.

Graf, Hofer and Winter-Ebmer (2011) evaluate the impact of a subsidized old-age part-time scheme (OAPT) on the Austrian labour market. This policy allows flexible retirement options for the elderly with an aim to increase labour supply. According to our matching estimates, employment probability increases slightly; especially in the first two years after entrance into the programme. Furthermore, the programme seems to reduce the measured unemployment risk. However, the total number of hours worked is significantly reduced by OAPT. While the policy is meant to reduce early exit from the labour force by allowing part-time work, our analysis indicates that most workers substitute part-time work for full-time work and thus the overall effect is rather negative.

In the initial proposal, we also mentioned projects using the Survey of Health, Aging and Retirement in Europe (SHARE) where we also contribute to the data collection. Over the last years we worked on several issues: Using data from the first two waves of SHARE we (Schnalzenberger, Schneeweis, Winter-Ebmer and Zweimüller 2008 and 2011) studied the relationship between job quality and subsequent employment decisions of individuals aged 50 years or older in ten European countries. Our binary and multinomial probit estimations suggest, that job satisfaction is negatively related to subsequent retirement decisions; especially for female workers. Further, an effort-reward-imbalance in the job (Siegrist, 1996, *Journal of Occupational Health Psychology*) is connected to retirement and disability pensions of women.

Together with Giorgio Brunello (Padova) and Margherita Fort (Bologna), we study the impact of compulsory schooling reforms in the 1930s–1960s in nine European countries on health in old age. Therefore, we use data from SHARE and ELSA (English Longitudinal Study of Ageing). For instance, Brunello, Fort, Schneeweis and Winter-Ebmer (2011) examine the relationship between education and health, as well as health-related behavior, using the variation of compulsory education (across countries and cohorts) as instrument for educational attainment. For women, we find a negative causal impact of education on chronic diseases, self-perceived poor health, hypertension and obesity. One additional year of education reduces the likelihood of having any chronic diseases by 11%-points, of self-perceived poor health by about 8%-points, hypertension by 9%-points and obesity by 8%-points. The main innovative part of the study is the decomposition of the impact of education on health into direct and indirect effects – coming through changes in lifestyle (related to Subproject HEALTH).

In a related project, we (Fort, Schneeweis and Winter-Ebmer, 2011) identify the causal impact of schooling on fertility. 2SLS regressions yield surprising results: education increases the number of biological kids per woman and decreases childlessness. We interpret our estimates as Local Average Treatment Effects, applying to individuals at the bottom of the education distribution. We have two economic explanations for this result: First, if the income effect exceeds the substitution effect – education increases wages and hence fertility. Second, education improves chances on the marriage market and family orientation, which in turn, increase fertility (related to Subproject POPULATION ECONOMICS).

4.2.1.2 Aging from the firm's perspective

From the side of employers, we made a big progress by decomposing wages into firm and worker components. The first application of this concerns unemployment duration of (elderly) workers. Old age unemployment is often argued to stem from overly high wage claims made by older workers. If older workers receive wages that are in excess of their productivity due to seniority-based wages, and they mistakenly assume that such wages reflect their true productivity, they will have reservation wages that are too high, and end up with long unemployment spells.

To shed light on this issue Böheim, Horvath and Winter-Ebmer (2010) decompose wages into worker and firm wage components, and find that firm-fixed components are sizeable parts of workers' wages. If workers can only imperfectly observe the extent of firm-fixed components in their wages, they might be misled about the overall wage distribution. Such misperceptions may lead to unjustified high reservation wages, resulting in overly long unemployment durations. We examine the influence of previous wages on unemployment durations for workers after exogenous lay-offs and, we find that younger workers are, in fact, unemployed longer if they profited from high firm-fixed components in the past. For older workers in contrast we do not find any adverse effects of high firm wage components on unemployment durations. The findings can be interpreted as evidence for overconfidence generated by imperfectly observed productivity.

In the continuation of this project we can expand on this work in two directions: i) we will cooperate with the Subproject EXPERIMENTAL INVESTIGATIONS to set up an experiment to look at overconfidence in the laboratory, ii) we will use the insights gained by decomposing wages into firm and worker effects to look at seasonal employment and signalling effects.

4.2.1.3 Aging from society's perspective

We started with an investigation of a layoff tax on the employment of male workers aged 50 and above (Schnalzenberger and Winter-Ebmer, 2009). In 1996 Austria introduced a tax for the layoff of older workers, which was further tightened in 2000. These regulations require employers to pay a tax of up to 170 percent of the gross monthly income when they give notice to employees aged 50 or more. Using data from Austrian social security records we investigate if such layoff taxes lead to less firing of older workers. Therefore, we compare a control group of workers aged nearly 50 with the treatment group above 50. Our difference-in-difference approach allows us to analyze the difference in the displacement probability of all prime aged workers. No effects on layoff rates could be observed for the introduction of the initially relatively low tax - which might be due to a crowding out of social norms by too small financial incentives. However, after increasing the tax in 2000, layoff rates - in particular for the group of the oldest workers - decreased significantly.

In a final step we use two methods to check if firms use substitution strategies to avoid the tax. Mobbing or bribing - to quit voluntarily - could be used to get rid of the older workers without formally laying them off. In the data, we could not find convincing evidence for firms using such

strategies. The effects of the tax do also vary with the size of the firm. The more similar workers are at hand, the easier the firm can choose a slightly younger worker instead of the older taxed worker for a potential layoff. As most firms in Austria are relatively small, such an unbalanced reaction is certainly troublesome for the policy makers, as only small firms had internalized the higher costs to the social insurance administration. Larger firms have been advantaged and might have gained even more market share.

In a project, related to the Subproject HEALTH, we look at the impact of pension payments on health outcomes. In 2000, the European Court of Justice abolished a type of early retirement in Austria. This reduced the gross pension of affected retirees up to 25 percent, i.e. a huge drop in income. The government acted after a short period of 4 months and reinstalled a similar replacement rate regime for those retirees. These two reforms constitute two natural experiments to analyze the causal effect of income on mortality and health (Schnalzenberger, 2011). Results suggest that this reduction in income did not change the seven-year survival probability of the retirees. The results are confirmed using both reforms and different methods of estimation. Finally, there is also no evidence for a significant impact on health outcomes, such as number of visits to either a general practitioner or a specialist or expenditure on medical expenditures.

4.2.2 Collaboration with other subprojects

Our research interests are widespread and often interact with other Subprojects. As the aging of the population is also changing the age structure of the (potential) work force, issues like entry into the labor market are of prime importance as well. Therefore, we broadened our research interests in the direction of entry into the labor force (education) and female labor supply (gender economics).

In several papers (Winter-Ebmer and Cardoso, 2010, Winter-Ebmer, Weichselbaumer and Zweimüller, 2008, Böheim, Himpele, Mahringer and Zulehner, 2011) we explore gender wage gaps, how they are related to Becker's theory of discrimination (competition, see also Subproject LABOR MARKET POLICY) and how firms' personnel policies may influence gender pay gaps. Winter-Ebmer and Wernhart (2011) explore female labor supply and the development of wage elasticities over time in a contribution to understand employment effects of different policies for different groups of workers. In a collaboration with the subprojects ECONOMETRICS and LABOR MARKET POLICY we (Frühwirth-Schnatter, Pamminer, Weber and Winter-Ebmer, 2011) developed a new Bayesian clustering framework to analyze patterns in the earnings development of young labour market entrants over their life cycle; a mixtures-of-experts Markov chain is applied to a panel of individual wage data from the ASSD to distinguish different groups of job entrants which are characterized by the status of the labor market at entry.

In (Schneeweis and Zweimüller, 2009a), we analyze career choices of female students in Austria using school register data. In most OECD countries, occupational segregation of males and

females in the labor market is still pronounced. This may be partly explained by women's reluctance to choose technical occupations, although the foundations for career choices are laid earlier, during education. Educational experts claim that female students are doing better in math and science, and are more likely to choose those subjects if they are in single-sex classes. Possible explanations are the lack of self-confidence in male dominated subjects, the dominating behavior of boys in the classroom and unequal treatment by teachers. Accordingly, we identify a causal impact of gender composition in coeducational classes on the choice of school type of female students. We find that girls are less likely to choose a female dominated school type, and are more likely to choose a technical school type at the age of 14 after spending the previous years in classes with a higher share of female students. The problem of endogenous school choice was addressed by using natural variation in gender composition of adjacent cohorts within schools. School-specific time trends control for unobserved factors that may change over time. The results are clear-cut and are supported by powerful falsification tests: Females are less likely to choose a female dominated school type and more likely to choose the technical school if they were exposed to a higher share of girls in previous grades.

In (Schneeweis and Zweimüller, 2009b), we estimate the relative age effect on track choice in Austria, a country where students are first tracked at the age of 10 and again tracked at the age of 14. We argue that early tracking creates inefficiencies because some students end up in the wrong track when track choice is based on a noisy signal of ability. Recent evidence suggests that the relative age of a student within a grade is related to achievement, and that this effect fades with the duration of schooling (Elder and Lubotsky, 2009, JHR). However, if students are separated into different educational tracks early in their schooling career, relative age effects may be preserved or even reinforced through differences in the rate of human capital accumulation between tracks. Using the aforementioned register data, as well as data from PISA 2003 and 2006, we test whether older students are more likely to attend the high track than their younger peers. Since age at track choice is endogenous, we exploited the exogenous variation in birth month to identify the causal effect of relative age. After the first tracking, the youngest students are almost 40 percent less likely to attend the high track than the oldest students. At the age of 14, when the second tracking occurs, we do not find a significant effect on average. This result is in line with recent research on the effects of relative age on track choice in Germany (Puhani and Weber, 2010, JHR). We extended this literature by studying differences between socio-economic groups and between rural and urban areas. We find a persistent age effect for students in urban areas and students from low parental background.

In collaboration with the Subproject POPULATION ECONOMICS, Horvath (2011) analyzes how immigration affects the distribution of wages in Austria over a time period of 12 years. Using non top-coded pay-slip data covering the universe of Austrian non-self-employed workers we are able to derive the precise wage distribution for blue- and white-collar workers. That means, we are able to study in detail how immigration affected earnings at different percentiles of the region specific wage distribution. Compared to earlier approaches studying the impact of immigration on natives' wages,

the strategy implemented by Dustmann, Frattini and Preston (2008) – and used here – allows for heterogeneous effects of immigration. Applying two different measures of immigrant shares we further disentangle the effects implied by immigration of workers within the same wage category – thus, those immigrants who directly compete with a given native in the labor market – and overall immigration. We find that there are some adverse effects of immigration as measured by wage group specific immigrant shares. The greatest part of these adverse effects is offset by overall immigration, possibly due to spillover effects or complementarities in the production process. For high income earners – both blue- and white-collar workers – we find positive effects implied by increased immigration. Overall it appears that immigration – especially of high skilled workers – is more likely to benefit native workers than to harm them.

In several papers - together with researcher from the HEALTH subproject – we study different aspects of the formation and dissolution of families which are related to Subproject POPULATION ECONOMICS (Böheim, Francesconi and Halla 2011; Frimmel, Halla and Winter-Ebmer, 2010 and 2011; Halla, 2011; Halla, Lackner and Scharler 2011). For instance, we estimate the causal effect of joint custody reforms in the United States (and in Austria) on a range of family outcomes, such as the incidence of (re)marriage, divorce, (marital) fertility, suicide, female labor supply, and alimony payments after divorce.. Our results suggest that the introduction of joint custody led to a long-run increase in marriage rates, and an increase in divorce rates for older couples. We observe a shift from non-marital to marital fertility; and an overall increase in fertility. Accordingly, female labor market participation decreased. Further, male suicide rates and domestic violence fell. The empirical evidence is consistent with the supposition that joint custody increased the relative bargaining power of men within marriage.

In another project, we exploit the suspension of a cash-on hand marriage subsidy in Austria to examine the differential divorce and fertility behavior of marginal marriages. Or, we study the effect of the size of the welfare state on demographic outcomes by exploiting the exogenous variation in public (social) spending due to varying degree of political fragmentation. Finally, we document how changes in assortative mating patterns over the last four decades along the dimensions of age, ethnicity, religion and education influenced marital instability in Austria. These issues are important prerequisites for a thorough analysis of the impact of family situation on retirement behaviour, wages and employment, which we plan in the continuation project.

4.2.3 National and international cooperation

We continued our collaboration with Guido Schwert (Munich), Andrea Ichino (Bologna) on employment of elderly workers, with Ana Rute Cardoso (Barcelona) we collaborated on gender issues and Steve Pischke (LSE) on education as well as with Emilia del Bono (Essex). We took up new collaborations with Marco Francesconi (Essex) on family issues and Giorgio Brunello (Padova) and

Margherita Fort (Bologna) on issues concerning SHARE data. In the collection of SHARE data we cooperated with a large group of international scholar from many disciplines, in particular Axel Börsch-Supan (Mannheim). From Austria we collaborated with A. Stiglbauer from the Austrian Central Bank, Ulrike Mühlberger (WU Vienna) and several persons from the Vienna Institute for Economic Research (WIFO) and the Institute for Advanced Studies (IHS). A new collaboration with Regina Roller-Wirnsberger (Medical University of Graz) was established to explore frailty concepts for elderly workers using SHARE data.

4.3 Labor Market Policy

This subproject started with the goal of empirically analyzing the interdependence of economic outcomes and labor market policy conditions. Thereby the interest lies in the supply side perspective of individual workers and in the demand side perspective of firms. We have organized the broad range of research questions along three thematical topics: (1) Aspects of the Unemployment Insurance System (2) Empirical Evaluation of Active Labor Market Programs (3) Firms' Reactions to Labor Market Policies. Over the last 2.5 years the project team has made a lot of progress in all three topics. Although some of the larger projects are still in ongoing, we can report on results from several working papers and published articles as can be seen from the detailed discussion of the main findings in the next section.

Under the first two topics we investigated questions related to individual labor supply. In terms of methodology, data availability and data processing these projects built on our previous work to a large extent. The third topic, concerned with labor demand, required a large amount of preliminary work and the setup of a new database. To fully exploit the rich information on the firm side and the linked worker-firm component of the ASSD we extracted a comprehensive firm database, the ASSD firm panel.

The resulting firm panel is an invaluable starting point for a variety of research questions leading to new insights into the employer's side of the labor market and the interaction of supply and demand that determines wage and employment levels as well as their distribution across firms. So far we have exploited it for research in three areas: a documentation of industry dynamics in Austria, studies of the determinants of the success of start-up firms, and the effects of demand side contributions to job-turnover from firm closures or mass layoffs. But the full potential of the firm data has clearly not been exploited yet.

Beyond labor economics, the ASSD firm panel allows us to address questions of industry dynamics and to investigate the link between market structure and entry and exit of firms. The option to link the ASSD firm panel, which is rich in longitudinal workforce related characteristics, to firm data with information on ownership structure, sales, and capital input widens the focus of research questions further in the direction of industrial organization. This new focus motivated the decision to split the current subproject in the NFN extension period into a subproject focusing on labor related research "Labor Market Policies" and the new subproject "Industry Dynamics and Market Structure" focused on research in industrial organization.

4.3.1 Results and Discussion

Here we introduce results from new research in the subproject "Labor Market Policy". The structure of the discussion follows the three main research topics

Under the second topic we have studied active labor market policies from two perspectives. First we evaluate a “marginal employment” which acts as a type of wage subsidy program for unemployed workers in Austria and evaluate the effects of marginal jobs on further labor market careers of the unemployed. Second, based on the huge and disperse literature of empirical evaluation of active labor market policies in many countries, we have conducted a meta-analysis to summarize the overall findings and draw general conclusions.

4.3.1.1 Unemployment Insurance System

Under the first topic we are primarily interested in the effects of the design and components of the Austrian unemployment insurance system on individual labor supply decisions. The main strategy is to recover behavioral responses to the system parameters from policy reforms or discontinuities in the policy rules and to link the empirical results to parameters from theoretical economic models.

In joint work with Dayanand Manonli (UCLA) we investigate labor supply responses to the Austrian severance pay (Manoli, Weber, 2010). We provide new empirical evidence on intertemporal labor supply elasticities in a life-cycle setting using responses to policy discontinuities in severance payments in Austria. We first present nonparametric graphical evidence documenting individuals' labor supply responses. Next, we develop a strategy to estimate the intertemporal labor supply elasticity. The strategy exploits the observed labor supply responses. Based on the observed patterns in individuals' retirement decisions, we estimate an intertemporal labor supply elasticity of 0.30; this estimate reflects that the disutility of labor supply increases relatively quickly with more years of work.

Related work with Raj Chetty (Harvard), Adam Guren (Harvard) and Dayanand Manonli (UCLA) on labor supply elasticities is based on the observation that macroeconomic calibrations imply much larger labor supply elasticities than microeconomic studies (Chetty et al, 2011). The most well known explanation for this divergence is that indivisible labor generates extensive margin responses that are not captured in micro studies of hours choices. We evaluate whether existing calibrations of macro models are consistent with micro evidence on extensive margin responses using two approaches. First, we use a standard calibrated macro model to simulate the impacts of tax policy changes on labor supply. Second, we present a meta-analysis of quasi-experimental estimates of extensive margin elasticities. We find that micro estimates are consistent with macro evidence on the steady-state (Hicksian) elasticities relevant for cross-country comparisons. However, micro estimates of extensive-margin elasticities are an order of magnitude smaller than the values needed to explain business cycle fluctuations in aggregate hours. Hence, indivisible labor supply does not explain the large gap between micro and macro estimates of intertemporal substitution (Frisch) elasticities.

4.3.1.2 Evaluation of Active Labor Market Policy

The effectiveness of active labor market policies – including subsidized employment, training, and job search assistance – has been a matter of vigorous debate over the past half century. While many aspects of the debate remain unsettled, some progress has been made on the key question of how participation in an active labor market program (ALMP) affects the labor market outcomes of the participants themselves. Progress has been facilitated by rapid advances in methodology and data quality, and by a growing institutional commitment to evaluation in many countries, and has resulted in an explosion of professionally authored microeconomic evaluations.

In a joint project with David Card (UC Berkeley) and Jochen Kluve (RWI) we synthesize some of the main lessons in the recent microeconomic evaluation literature, using a new and comprehensive sample of program estimates from the latest generation of studies (Card, Kluve, Weber, 2010). Our sample is derived from responses to a survey of 358 academic researchers affiliated with the Institute for the Study of Labor (IZA) and the National Bureau of Economic Research (NBER) in spring 2007. These researchers and their colleagues authored a total of 97 studies of active labor market policies between 1995 and 2007 that meet our inclusion criteria. We conduct a meta-analysis using a sample of 199 “program estimates” – estimated effects for a particular program on a specific group of participants – extracted from these studies. We find that job search assistance programs are relatively effective, whereas public sector employment programs are relatively ineffective. Training programs are associated with favorable medium term outcomes, although in the short-term they often appear ineffective. We also find that the outcome variable used to measure program impact matters, but neither the publication status of a study nor the use of a randomized design is related to the sign or significance of the program estimate.

The second project under this topic joint with Rene Boeheim (Uni Linz) investigates the effects of *marginal employment* for unemployed workers (Boeheim, Weber, 2010). Marginal employment is a type of wage subsidy paid to unemployed workers. In marginal jobs they keep their unemployment benefits if the wage is below a certain threshold. We ask if the unemployed who start marginal jobs face better labor market outcomes than those who do not work. A priori it is not clear if those who work in marginal employment improve their labor market status, e.g. by signaling effort, or worsen it by reduced job search effort. We select unemployed workers and investigate the effect of marginal employment on their labor market outcomes, by means of propensity score matching. Our results suggest that selection into marginal employment is “negative”, i.e. workers with characteristics we usually associate with low-productivity are more likely to select into such jobs. The unemployed who start to work in marginal employment during their unemployment spell suffer a (causal) penalty for doing so, relative to their peers who do not. The penalty, in terms of less employment, more unemployment, lower wages, lessens over time but is still present after three years.

4.3.1.3 Firms' Responses to the labor market policies

Under this topic we set up a comprehensive firm database, the ASSD firm panel, based on the linked worker-firm component in the ASSD, which is described first. Subsequently we discuss results from applied studies based on these data.

The working paper by Fink, Kalkbrenner, Weber, Zulehner (2010) demonstrates how firm information can be extracted from employer identifiers in the universe of private sector workers in the ASSD. To correctly pin down entry and exits we use a worker flow approach which follows clusters of workers as they move across administrative entities. This procedure enables us to define different types of entry and exit such as start-ups, spinoffs, closures, or take-overs. We show that our firm definition results in a demography which is comparable to official statistics of firm registers. The resulting database covers the period of 1976 to 2006 and provides a valuable description of Austrian firm dynamics over the past 3 decades. The resulting firm panel is a valuable starting point for a variety of research questions involving firm decisions.

In (Weber and Zulehner, 2010) we revisit Becker's (1957) famous theory on discrimination, according to which entrepreneurs with a strong prejudice against female workers forgo profits by submitting to their tastes. In a competitive market their firms lack efficiency and are therefore forced to leave. We present new empirical evidence for this prediction by studying the survival of start-up firms in longitudinal matched employer-employee data. We find that firms with strong preferences for discrimination, i.e. a low share of female employees relative to the industry average, have significantly shorter survival rates. This is especially relevant for firms starting out with female shares in the lower tail of the distribution. Our results are compatible with a model of firm entry and selection, where discrimination persists through constant entry of prejudiced firms and competition weeds out the strongest discriminators. We also find evidence for employer learning as highly discriminatory start-up firms that manage to survive submit to market powers and increase their female workforce over time.

In a related paper (Weber and Zulehner, 2010) we study whether women make better managers by examining the relationship between females among the first hires of start-up companies and business success. Start-ups are small, dynamic, and risky enterprises, which are particularly sensitive to business decisions. A single bad decision can lead straight to the exit. So if there is an effect of gender-diversity in leading ranks, one should see it in start-ups. We measure the success of start-up firms by their survival. Thus our setup is characterized by a clear timing of events: start-ups hire employees and the success is revealed subsequently. This is an advantage over studies based on established corporations where it is often unclear whether excellent performance triggers the entry of female managers or vice versa. We use information on start-ups from the ASSD which does not allow to identify the owner of the firms but provides detailed longitudinal information about workforce and payroll. Although no exact occupational categories are given, the data also provide valuable evidence

on a link between first hires and leadership positions. Average wages among workers hired in the first few months after firm entry are significantly higher than among workers hired later on.

A further advantage is that we presumably observe lower executive levels as the share of female first hires is relatively high. Our empirical analysis asks the following two questions. Do women among the first hires have an impact on the gender composition of the workforce while the firm is still growing? Do females among first hires have an effect on firm survival? Our results show that firms with female first hires have a higher share of female workers at the end of the first year after entry. Either they are a positive signal which encourages other female workers to join the company or they actively influence the selection process. Further, we find that firms with female first hires are more successful and stay longer in the market. We conclude that our results support the hypothesis that gender-diversity in leading positions is an advantage for start-up firms.

Despite the economic importance of international foreign direct investment (FDI) flows, investment decisions of multinational firms are not well understood. A multinational firm can establish a subsidiary in a foreign country through greenfield investment or through acquiring an existing firm in the target country. The goal of a study by Esther Kalkbrenner (2010) is to shed some light on the determinants of foreign market entry modes. In particular to analyze the systematic variation in the mode choice of FDI, namely acquisition versus non-acquisition (greenfield) investments. We propose a transparent and general applicable method to construct a data base. This database includes information about parent firms and their majority owned affiliates in foreign countries. A particular feature is the construction of a variable which allows differentiating the establishment mode of parent firms into foreign markets. For this purpose two databases from the Bureau van Dijk are interlinked: Osiris and Zephyr. We provide evidence that firm heterogeneity is important for U.S. multinational firms in determining their entry mode choice. However, this is not a distinguishing feature for European multinational firms. For both sets of parent firms the host country characteristics play an important role in deciding on the entry mode. Higher institutional quality increases the likelihood of acquisitions versus greenfield investments.

4.3.2 National and international cooperation

4.3.2.1 NFN Internal Cooperation

This subproject is well integrated in the national research network. The focus of our research is especially close to the subprojects “AGEING”, “POPULATION ECONOMICS”, and “HEALTH” so that discussions, exchange of research ideas, and comments on work in progress at the regularly organized workshops and in smaller meetings have a highly productive impact on all involved researchers. Joint efforts in data processing and transmission of knowledge on Austrian institutions and laws generate large spillovers as well. So far we have completed two joint projects in collaboration with the

subprojects “BAYESIAN ECONOMETRICS” and “AGING”, which demonstrate the success of the network effects on our research output.

The first study is in cooperation with the working group “BAYESIAN ECONOMETRICS” and “AGING” (Frühwirth-Schnatter, Pamminger, Weber, Winter-Ebmer, 2010). The aim is to analyze patterns in the earnings development of young labor market entrants over their life cycle. We identify four distinctly different types of transitions between discrete earnings states in a large administrative data set. Further we investigate the effects of labor market conditions at the time of entry on the probability of belonging to each transition type. To estimate our statistical model we use a model based clustering approach. The statistical challenge in our application comes from the difficulty in extending distance-based clustering approaches to the problem of identify groups of similar time series in a panel of discrete-valued time series. We use Markov chain clustering, proposed by Pamminger and Frühwirth-Schnatter (2010), which is an approach for clustering discrete-valued time series obtained by observing a categorical variable with several states. This model-based clustering method is based on finite mixtures of first-order time-homogeneous Markov chain models. In order to analyze group membership we present an extension by formulating a probabilistic model for the latent group indicators within the Bayesian classification rule by using a multinomial logit model.

The second paper is in cooperation with the working group “AGING” (Del Bono, Weber, Winter-Ebmer, 2010). Here we investigate how fertility decisions respond to unexpected career interruptions which occur as a consequence of job displacement. Using an event study approach we compare the birth rates of displaced women with those of women unaffected by job loss after establishing the pre-displacement comparability of these groups. Our results reveal that job displacement reduces average fertility by 5 to 10% in both the short and medium term (3, 6, and 9 years, respectively), and that these effects are largely explained by the response of women who are more likely to invest in human capital. The results are interpreted in the light of a model in which the rate of human capital accumulation slows down after the birth of a child and all specific human capital is destroyed upon job loss.

4.3.2.2 External Cooperations

Beside the internal cooperation, our work has benefitted a lot from cooperation with partners from renowned international research institutions in Europe and in the United States. A feature that makes the NFN very attractive for international researchers is the high data quality of the ASSD and the good data access. Over the last years we were able expand existing cooperations with David Card from UC Berkeley in research on active labor market policies and social insurance systems (Card, Kluve, Weber 2010), with Raj Chetty from Harvard University in research on labor supply elasticities (Chetty, Guran, Manoli, Weber, 2011), and with Emilia Del Bono from the University of Essex in research on fertility (Del Bono, Weber, Winter-Ebmer, 2010). In addition promising new research cooperations with young researchers have been established. Among them are Day Manoli from UCLA and

Kathleen Mullen from RAND, with whom we are engaged in joint work on labor supply decisions around retirement (Manoli, Weber, 2010).

4.4 Population Economics

Members of the project produced papers on the impact of family policy on fertility and employment. One study, „How does parental leave affect fertility and return-to-work? Evidence from two natural experiments“ by Rafael Lalive and Josef Zweimüller has been published in the Quarterly Journal of Economics. Two further papers explore the effects of family policy on labor market outcomes and child development. A paper, „The Effects of Labor Market Interruptions on Employment and Wages“ by Beatrice Brunner analyzes the causal effects of changes career interruptions of women due to child birth. The study „How Does Early Childcare affect Child Development? Learning from the Children of German Unification“ by Christina Felfe and Rafael Lalive investigates the causal effect of center-based care versus care provided by the mother during early childhood (age 0-3) on a wide range of cognitive and non-cognitive skills. Identification is based on German Unification.

Members of the project were also studying other topics that related to both population and health economics and/or are more closely related to other subprojects of the NRN. The Papers include the impact of early retirement on mortality; the impact of financial incentives and quota rule for employment of disabled workers; the impact of disability pension rules for employment of older workers, the impact of job loss on labor market outcomes of older workers; the cyclical behavior of workplace accidents; labor entry market conditions and long-run success on the labor market; the cultural determinants of unemployment; the impact of unemployment on right-wing extremist crimes.

Several papers have been published during the first period of the project, including Quarterly Journal of Economics, Journal of Health Economics, Economics Letters, Scandinavian Journal of Economics, Empirica, and Journal of Population Economics. Other papers were invited for a revise and resubmit, including the Journal of the European Economic Association, Economic Journal, Journal of Public Economics, Journal of Health Economics, Journal of Human Resources, and the Swiss Journal of Economics and Statistics.

4.4.1 Results and Discussion

4.4.1.1 The Long-Run: Family Policies

The study “How does parental leave affect fertility and return-to-work? Evidence from two natural experiments“ by Rafael Lalive and Josef Zweimüller analyzes the effects of changes in the duration of paid, job-protected parental leave on mothers' higher-order fertility and postbirth labor market careers. Identification is based on a major Austrian reform increasing the duration of parental leave from one year to two years for any child born on or after July 1, 1990. We find that mothers who give birth to their first child immediately after the reform have more second children than prereform mothers, and that extended parental leave significantly reduces return to work. Employment and earnings also decrease in the short run, but not in the long run. Fertility and work responses vary across the

population in ways suggesting that both cash transfers and job protection are relevant. Increasing parental leave for a future child increases fertility strongly but leaves short-run postbirth careers relatively unaffected. Partially reversing the 1990 extension, a second 1996 reform improves employment and earnings while compressing the time between births.

“The Effects of Labor Market Interruptions on Employment and Wages“ by Beatrice Brunner analyzes the causal effects of changes in the maximum duration of paid, job-protected parental leave on mothers’ post-birth labor market outcome in Austria. The identification is based on three policy changes in maximum leave duration, two one-year expansions (1990 and 2000) and a 6 months reduction (1996). I find the maximum leave duration to be strongly reflected in women’s return-to-work behavior. I also find evidence for a significant medium-term drop in labor supply caused by the one-year expansions. However, after six years employment probability is not affected by the time of absence anymore. Regarding the expected wage level I find longer labor market absence to result in strong short-run wage disadvantage. In the long run, I find a significant negative impact of 2 Euros per day for the 2000-reform but no consistent effect for the 1990-reform. Thus, only estimates for the 2000-reform do provide evidence that PL expansion does enhance the gender-wage inequality. Furthermore, I identify positive wage selection in terms of labor market participation but no “selection effect”. I also find no explicit evidence for the existence of a “human capital effect”.

Many OECD countries are expanding early childcare substantially. The study „How Does Early Childcare affect Child Development? Learning from the Children of German Unification“ by Christina Felfe and Rafael Lalive investigates the causal effect of center- based care versus care provided by the mother during early childhood (age 0-3) on a wide range of cognitive and non-cognitive skills. Identification is based on German Unification. East Germany provided universal care whereas West Germany had no formal early child care system in 1989. Unification triggered a slow process of convergence in center-based child-care offer rates. We use within-region time variation in offer rates to assess the effect of center based care on child development. Data on infants aged 2-4 years from the GSOP and data on children aged 5-10 from the German Child Panel provide information on the full age range 2-10 years after birth. Results suggest that high-quality center-based care promotes child development both in terms of cognitive and non-cognitive skills. We also find that the extra children attending child-care because access is less restricted benefit more from formal care than the average child placed in child care – consistent with rationing favoring children from advantaged backgrounds. Last, center-based care gains do not dissipate as children grow older.

Parental leave regulations in most OECD countries have two key policy instruments: job protection and cash benefits. The study „Parental Leave and Mothers' Careers: The Relative Importance of Job Protection and Cash Benefits“ by Rafael Lalive, Analia Schlosser, Andreas Steinhauer and Josef Zweimüller studies how mothers’ labor market outcomes depend on alternative mixes of these key policy parameters. Exploiting a series of major parental leave policy changes in

Austria, we find that longer cash benefits lead to a significant delay in return to work and that the magnitude of this effect depends on the relative length of job protection and cash benefits. We do not find a significant impact on labor market success in the medium run, neither of benefit duration nor of job-protection duration. To understand the relative importance (and interaction) of the two instruments we set up a non-stationary job search model in which cash benefits and job protection determine the decisions of both when to return to work and whether or not to return to the pre-birth employer. Despite its lean structure, the model does surprisingly well in matching empirically observed return to work profiles. The simulation of alternative counterfactual regimes shows that a policy that combines both job protection and benefits payments succeeds to induce mothers to spend some time with the child after birth without jeopardizing their medium run labor market attachment.

4.4.1.2 The Short- and Medium Run I: Labor Supply

The study „The effects of increasing financial incentives for firms to promote employment of disabled workers“ by Jean-Philippe Wüllrich studies the effect of an increase in financial incentives for firms to promote employment of disabled workers in the context of the Austrian employment quota for disabled workers. Adopting the interrupted time-series design and using comprehensive register data, I find that an increase in a tax charged for non-compliance with the employment requirement from EUR 150.- to EUR 196.- in July 2001 had an immediate as well as short-run impact on the promotion of employment for disabled workers. By the end of 2002, one in 15 firms employ one disabled worker more than they would have without the tax increase. In terms of the average number of disabled workers, this corresponds to a 6.4% increase in the number of disabled workers per firm.

The study „The Impact of Labor Market Entry Condition on Initial Job Assignment, Human Capital Accumulation, and Wages“ by Beatrice Brunner and Andreas Kuhn estimates the effects of labor market entry conditions on wages for male individuals first entering the Austrian labor market between 1978 and 2000. We find a large negative effect of unfavorable entry conditions on starting wages as well as a sizeable negative long-run effect. Specifically, we estimate that a one percentage point increase in the initial local unemployment rate is associated with an approximate shortfall in lifetime earnings of 6.5%. We also show that bad entry conditions are associated with lower quality of a worker's first job and that initial wage shortfalls associated with bad entry conditions only partially evaporate upon involuntary job change. These and additional findings support the view that initial job assignment, in combination with accumulation of occupation or industry-specific human capital while on this first job, plays a key role in generating the observed wage persistencies.

A number of OECD countries aim to encourage work integration of disabled persons using quota policies. For instance, Austrian firms must provide at least one job to a disabled worker per 25 non-disabled workers. Non-complying firms pay a tax for each job-month missed. The study „Do Financial Incentives for Firms Promote Employment of Disabled Workers?“ by Rafael Lalive, Jean-Philippe Wüllrich and Josef Zweimüller studies the role of this employment quota on firms' demand

for disabled workers. Specifically, we compare firms that employ 25 non-disabled workers and are subject to the non-compliance tax to firms that employ 24 non-disabled workers and are not subject to the tax. Our results indicate that firms with 25 non-disabled workers employ about 0.04 (or 12 percent) more disabled workers than would be expected from smaller firms, employment effects are stronger in low-wage firms than in high-wage firms, and the quota generates excess disabled employment on the order of 0.07 among firms located at non-disabled firm size 50 and higher. Two reforms of the system also suggest that increasing the non-compliance tax increases excess disabled employment, whereas paying a bonus to over-complying firms slightly dampens the employment effects of the non-compliance tax. These results are only valid if we rule out strategic behavior in firms' choice of non-disabled employment that is related to the tax. We show in a simple behavioral framework that firms may indeed manipulate non-disabled employment. This manipulation can lead to either upward or downward biases depending on the assumption of whether disabled workers are productive. Based on empirical estimates for manipulation we are able to provide a lower and upper bound for the causal effect of the quota on firms' demand for disabled employment. As this bound is still informative we conclude that the bias from manipulation is quantitatively of minor importance.

The study „A New Approach to Evaluating Active Labour Market Programs“ by Rafael Lalive, Michael Morlok and Josef Zweimüller calculates the impact of Active Labour Market Programmes through the use of three new indicators measuring the application performance of the unemployed. These indicators can be measured repeatedly and therefore allow the usage of Panel Regression methods, cancelling out any unobserved individual heterogeneity. To implement the new approach, data on 30,000 applications has been collected. Using this data, a large positive effect for unemployed with a long term unemployment forecast was estimated. For unemployed without such a forecast, the effect is much smaller. The paper also shows that the new evaluation approach fulfils the requirements of a good controlling instrument: It is accurate, detailed, non-intrusive, inexpensive and therefore easy to keep up to date, easy to understand and communicate.

„Tightening the Purse Strings: The Effect of Stricter DI Eligibility Criteria on Labor Supply“ by Stefan Staubli studies the effect of a large-scale policy change in the Austrian disability insurance program, which tightened eligibility criteria for men above a certain age. Using administrative data on the universe of Austrian private-sector employees, the results of difference-in-difference regressions suggest a substantial and statistically significant decline in disability enrollment of 6 to 7.4 percentage points and an increase in employment of 1.6 to 3.4 percentage points. The policy change had important spillover effects into the unemployment and sickness insurance program. Specifically, the share of individuals receiving unemployment benefits increased by 3.5 to 3.9 percentage points, and the share receiving sickness insurance benefits, by roughly 0.7 percentage points.

The study “Unemployment Insurance, Disability Insurance and the Early-Retirement Decision” by Lukas Inderbitzin, Stefan Staubli and Josef Zweimüller explores how more generous

unemployment insurance (UI) rules affect the early-retirement decision of older unemployed workers. In Austria, workers aged 55+ enjoy relaxed access to disability insurance (DI) and take-up of a disability pension essentially allows workers to withdraw permanently from the labor market. To identify the causal impact of more generous UI benefits on early retirement we exploit a policy change that increased the maximum duration of UI benefits from initially 30 weeks to 209 (!) weeks. Since the UI benefit extension was confined to a sub-set of Austrian regions, this policy change allows us to compare residents in eligible regions to residents in non-eligible regions. We find that workers in the age group 50-54 exploit the more generous unemployment benefits as a channel that allows them to retire early by taking advantage of longer UI benefits followed by relaxed access to DI benefits. We also find a very large increase in early retirement rates for individuals closer to the retirement age (age group 55-57). These individuals do not only strongly reduce their labor supply, they also substitute UI for DI in order to bridge the gap to eligibility for regular public pensions.

The study “The Impact of Raising the Retirement Age on Labor Force Participation” by Stefan Staubli and Josef Zweimüller studies the effect of a large-scale policy change in the Austrian old-age pension scheme, which increased the minimum retirement age from 60 to 61.5 for men and from 55 to 56.5 for women. Using administrative data on the universe of Austrian private-sector employees, the results of difference-in-difference regressions suggest a substantial and statistically significant increase in employment of 8.1 to 11.7 percentage points among men and 17.6 to 21 percentage points among women. The policy change had important spillover effects into the unemployment insurance program. Specifically, the share of individuals receiving unemployment benefits increased by 5.7 to 6.3 percentage points among men and 8.9 to 11.5 percentage points among women. For men we also find a significant increase disability enrollment by roughly 6.8 to 7.4 percentage points.

Workplace accidents are an important economic phenomenon. Yet, the pro-cyclical fluctuations in workplace accidents are not well understood. They could be related to fluctuations in effort and working hours, but workplace accidents may also be affected by reporting behavior. The study „“ by Jan Boone, Jan van Ours, Jean-Philippe Wüllrich and Josef Zweimüller uses unique data on workplace accidents from an Austrian matched worker-firm dataset to study in detail how economic incentives affect workplace accidents. We find that workers who reported an accident in a particular period of time are more likely to be fired later on. And, we find support for the idea that recessions influence the reporting of moderate workplace accidents: if workers think the probability of dismissals at the firm level is high, they are less likely to report a moderate workplace accident.

The study „The Value of a Statistical Injury: New Evidence from the Swiss Labor Market“ by Andreas Kuhn and Oliver Ruf studies the monetary compensation for non-fatal accident risk in Switzerland using the number of accidents within cells defined over industryXskill-level of the job and capitalizing on the partial panel structure of our data which allows us to empirically isolate the wage component specific to the employer. Our results show that using accident risk at a lower level of aggregation, using narrower samples of workers, and using the wage component that is specific to the

firm all yield higher (i.e. more positive) estimates of risk compensation. However, we only find a statistically significant positive compensation for non-fatal accident risk for workers in jobs with the lowest skill-level. Our preferred estimate for this group of workers yields an estimate of about 36,000 Swiss francs per prevented injury per year.

The study “Fatal Attraction? Access to Early Retirement and Mortality“ by Andreas Kuhn, Jean-Philippe Wüllrich and Josef Zweimüller estimates the causal effect of early retirement on mortality for blue-collar workers. To overcome the problem of negative health selection, we exploit an exogenous change in unemployment insurance rules in Austria that allowed workers in eligible regions to withdraw permanently from employment up to 3.5 years earlier than workers in non-eligible regions. For males, instrumental-variable estimates show that retiring one year earlier causes a significant 2.4 percentage points (about 13%) increase in the probability of dying before age 67. We do not find any adverse effect of early retirement on mortality for females. Our analysis of death causes suggests that male excess mortality is concentrated among three causes of deaths: (i) ischemic heart diseases (mostly heart attacks), (ii) diseases related to excessive alcohol consumption, and (iii) vehicle injuries. These causes account for 78 percent of the causal retirement effect (while accounting for only 24 percent of all deaths in the sample). About 32 percent of the causal retirement effect are directly attributable to smoking and excessive alcohol consumption.

The study “The public health costs of job loss“ by Andreas Kuhn, Rafael Lalive and Josef Zweimüller studies the short-run effect of involuntary job loss on comprehensive measures of public health costs. We focus on job loss induced by plant closure, thereby addressing the reverse causality problem as job displacements due to plant closure are unlikely caused by workers’ health status, but potentially have important effects on individual workers’ health and associated public health costs. Our empirical analysis is based on a rich data set from Austria providing comprehensive information on various types of health care costs and day-by-day work history at the individual level. Our central findings are (i) overall expenditures on medical treatments are not strongly affected by job displacement; (ii) job loss significantly increases expenditures for antidepressants and related drugs, as well as for hospitalizations due to mental health problems for men (but not for women) although the effects are economically rather small; and (iii) sickness benefits strongly increase due to job loss.

4.4.1.3 The Short- and Medium Run II: Immigration

The study “Brain Drain and Brain Return: Theory and Application to Eastern-Western Europe“ by Karin Mayr and Giovanni Peri develops a novel model of optimal education, migration and return by heterogeneous, forward-looking agents. The model is parameterized and simulated to analyze the effects of immigration policies, identifying the brain-drain, brain-gain and brain-return effects when barriers to migration are reduced. We use parameters from the literature to inform our model and simulate migration and return from middle-income to industrialized countries. In particular, we apply

the model to study migration and return between Eastern and Western Europe. We find that, for plausible degrees of openness, the possibility of return migration combined with the education incentive channel turns the brain drain into a brain gain for Eastern Europe.

It is frequently argued that unemployment plays a crucial role in the occurrence of right-wing extremist crimes. The study “Unemployment and Right-wing Extremist Crime“ by Armin Falk, Andreas Kuhn and Josef Zweimüller tests this hypothesis empirically using data from Germany. We find that right-wing criminal activities occur more frequently when unemployment is high. The substantial difference in right-wing crime between East and West German states can mostly be attributed to differences in unemployment. This finding reinforces the importance of unemployment as an explanatory factor for right-wing crime and questions explanations based solely on the different socialization in former communist East Germany and the liberal West German states.

Immigration control is high on the political agenda and part of any election campaign throughout Europe and the United States. Although immigration has potential positive effects on the receiving economy, negative aspects of immigration attract the most attention. Extreme rightwing parties with restrictive position towards immigration became very popular in many European countries. The study “Political Implications of Immigration“ by Martin Halla, Alexander F. Wagner and Josef Zweimüller studies the relationship between the success of the extreme right-wing Freedom Party of Austria (FPOE) and several waves of (labour) immigration to Austria. Therefore, we utilize highly disaggregated data on election results in combination with census data. In a first step we exploit the spatial correlation approach to establish a clear causal link of immigration on the success of the FPOE. In a second step we show that this effect is higher for Muslim immigrants, increases with high unemployment of natives and decreases with the education of natives. Our results support the hypothesis that opposition to immigration is shaped by fears about labour market competition and non-economic concerns, such as cultural or racial prejudices. An understanding how such attitudes are formed is not only necessary to explain the growth of extremist anti-immigrant political movements, but also decisive for designing efficient migration policies.

4.4.2 National and international cooperation

Cooperations within the NRN include the paper “Too Old To Work, Too Young To Retire” and the paper “Does the Color of the Collar Matter?” which is joint effort with the subproject AGING.

Further cooperations include efforts to acquire new data, including the individual data from the demographic statistics on births, mortality (as well as marriages and divorces) from Statistics Austria; tax record data from the Austrian Ministry of Finance, Vienna. External co-operations include joint projects with Jan van Ours and Jan Boone from Tilburg University; Andrea Ichino from University of Bologna, Analia Schlosser from Tel Aviv University, Guido Schwerdt from CESifo Munich and Armin Falk from the University of Bonn.

4.5 Health Economics

The Health Economics working group has studied (i) health care utilization and health status, (ii) economics of prevention and (iii) primary health care markets in the first funding period.

Overweight and obesity are important indicators for a person's health status and held responsible for an increase of health cost in many industrialized countries. We have analyzed the effect of overweight and obesity on extramural expenditure, incidence of hospitalization and days of sick leave. Using rich health record panel data for 130,000 persons we find that overweight and obese persons have higher extramural expenditure, spend more days in hospital and are more often away sick. Cost saving potentials by stabilizing body mass indices would be substantial.

In a closely related project we estimate the causal effects of participating in voluntary general health-checks in Austria on a number of subsequent health outcomes such as extramural expenditure, hospitalization, drug intake, sick leave, and mortality. As identification strategy we exploit regional variation in screening uptake as a consequence of general practitioners' medical service inducement. Our IV strategy reveals an increase in extramural expenditure and hospital days in the short-run (1-3 years) whereas we do not find long run cost saving potentials for both outcomes. Moreover, there is no evidence for an effect of screening on the incidence of sick leave or mortality in the short and in the long-run. The results of this project support a more differentiated view of mass screening programs as it has been expressed by international health officials recently.

Another project examines the effect of health on income. For this purpose, we interpret accidents occurring on the way to and from the place of work as a negative health shock. Performing exact matching of treated and control workers based on their (labor market) history and applying a difference-in-differences approach to control for time-invariant unobserved heterogeneity, we find a significant and persistent causal effect of a negative health shock on employment and earnings throughout the whole post-treatment period under consideration (5 years).

In a further health status project we analyze the determinants of birth weight with a focus on the role of the mothers' family status. Based on data from the Austrian birth register from 1984 to 2007 we find evidence that newborns of married mothers have a significantly higher birth weight as compared to those of single mothers. The estimated effect is between 30 and 70 grams, and remains stable if we control for mother fixed-effects and different sets of socio-economic variables.

Research on primary health care markets focuses on the physician gender wage gap in a public health insurance system based on Bismarckian principles. Here we have earnings data recorded by the mandatory regional health fund available and do not have to rely on self-reported income. In particular, we refer to a panel of annual earnings of physicians in the Austrian province of Tyrol between 2000 and 2004, comprising a rich set of doctors' attributes and their patients' characteristics. We observe a gender earnings gap of about 32 percent. Applying a Blinder-Oaxaca decomposition, we

find that a substantial part of this difference cannot be explained by individual or market characteristics. These results are in line with previous studies, suggesting that discrimination might be a robust and persistent phenomenon in the physician labor market, regardless of whether the health care system is dominated by private or public health insurance providers.

4.5.1 Results and Discussion

According to the proposal for the first funding period research of the HEALTH ECONOMICS working group has tried to account for the multifaceted determinants of individual health such as lifestyle, working and living conditions, consumption patterns and the utilization of health care systems. Our projects have focussed on three interrelated research topics: (i) health care utilization and health status, (ii) economics of prevention, and (iii) primary health care markets. In this report we provide an overview of the conducted research in the first funding period. On the basis of single projects we motivate the research questions, present the applied methodology and results and finish with concluding remarks.

4.5.1.1 Overweight and Obesity: How much do they cost?

Overweight and obesity are reasons for continuously increasing health cost in most industrialized countries. In this project we analyze the development of the body mass index (BMI) over the last two decades in Austria and estimate the effects of overweight and obesity on health expenditure. Using information from anonymous health screening examinations that were conducted on 130,000 individuals between 1985 and 2005, we disentangle variations in BMI into age and period effects and control for individual fixed effects. This approach allows us to separate changes in BMI as an individual gets older (age effect) from variations in the BMI that affects all individuals independent of their age and birth cohort (period effect). The BMI age profiles for men and women are inverse U-shaped, and we find significantly positive period effects for non-academic men and women.

Medical and health economics literature has documented that overweight and obesity lead to higher health service utilization. We therefore estimate in a second step the effects of overweight, obesity and other medical indicators such as blood pressure, cholesterol, triglycerides, and gamma GT on health expenditure in a second step. Controlling for age, sex, education, labor market status and nationality we find that overweight and obese persons – as compared to people of normal weight – have significantly higher expenditure for medical attendance and prescribed drugs, spend more days in hospital, and are more often away sick. Similar correlations occur for the influence of triglycerides and gamma GT whereas the influence of cholesterol is either negative or insignificant. A high blood pressure increases extramural expenditure and has no influence on days in hospital or on sick leave absences.

In order to illustrate the costs of overweight and obesity we use the regression results for a back of the envelope calculation simulating to what extent an increase in health expenditure could

have been prevented if the BMI period effects had not occurred. Stabilizing average BMIs in Austria at 1990 levels would have resulted in a onetime reduction of annual extramural expenditure in a range between 0.6 and 2.3 percent. We conclude that overweight and obesity are a substantial burden for the health systems that may justify necessary policy interventions. (*Hackl, Halla, Hummer, Pruckner*)

4.5.1.2 The Causal Effect of Health on Income: Quasi-Experimental Evidence from Accidents

A second project examines the effect of health status on income. A positive correlation between health and income (or, more generally socio-economic status) is well documented in social and medical sciences. This finding can be explained by (at least) three different effects. First, income affects health, second, health affects income, or third, the correlation is driven by a confounding factor. It is important to distinguish these three explanations in order to understand the sources of health inequalities, and to design efficient economic policy to improve health, welfare, and well-being. In our paper, we aim to identify a causal effect of health on labor market outcomes. For this purpose, we interpret accidents occurring on the way to and from the place of work as a negative health shock. Data from the Austrian mandatory social accident insurance, in combination with Austrian social security data (a linked employer-employee data-set) allows us to perform exact matching of treated and control workers based on their (labor market) history. In addition, we exploit the longitudinal structure of our data and apply a difference-in-differences approach to control for time-invariant unobserved heterogeneity. This research design allows us to establish a causal effect. Our results suggest a negative and persistent causal effect of a negative health shock on employment and earnings throughout the whole post-treatment period under consideration (5 years). While the size of the average causal effect is relatively small, our more detailed analysis stratifying by age, sex and occupation, reveals plausible patterns of treatment heterogeneity. For instance, we find stronger employment effects for older employees (aged 38-50). This seems very plausible since older workers recover less well, and are less attached to the labor market. Currently, we are working on an instrumental-variable strategy to corroborate our findings. For this purpose, we use detailed weather data and look at accidents caused by exogenous weather conditions. (*Halla, Zweimüller*), March 2011

4.5.1.3 Birth weight and family status

Existing empirical evidence has shown that birth weight is a significant predictor of future health outcomes (Black, Devereux and Salvanes 2007, QJE). It is therefore important to understand how prenatal influences determine the newborns' health. In this project we study the socio-economic determinants of birth weight and whether potential stress factors during pregnancy may have an impact on it. We focus on the role of the mother's family status since marriages may offer higher financial and social stability and that the availability of a supporting partner may reduce stress

significantly. In particular, we also take account of family disruption, e.g. a divorce during pregnancy that is interpreted as a signal for a bad marriage accompanied by social stress.

For the empirical analysis, we use Austrian birth register data covering all births between 1984 and 2007. The dataset offers health-related information such as birth weight, length at birth, Apgar-scores and gestation duration and includes comprehensive socio-economic information of the parents. The estimated effect of the family status is in a range between 30 and 70 grams higher birth weight if the mother is married, and remains stable if we control for mother fixed-effects and different sets of socio-economic variables. It is remarkable that a divorce (and the related stress) results in a 20 to 80 gram lower birth weight compared to newborn babies of single mothers. This effect is stable over time – the positive effect of a stable marriage in the 1980s was as strong as in the 2000s. Finally, quantile regression results suggest that family effects are much more pronounced at lower quantiles (+ 80 grams) and diminish at higher percentiles (+20 grams). The conclusion to be drawn from this analysis is that social stress is an important determinant of birth weight, particularly at the lower tail of the birth weight distribution. (*Frimmel, Pruckner*), April 2011

4.5.1.4 Determinants of cardiovascular diseases with special reference to nutrition behavior

Another interdisciplinary project analyzes the risks for cardiovascular diseases by combining data from an extramural medical centre in an urban area in Austria with the health status and the nutrition behavior of the patients. Using logistic regressions, we find a positive relationship between the body mass index and the probability for cardiovascular events in all age groups beyond 20 years. As expected, physical activity is negatively associated with the probability for a cardiovascular event in the elderly patients. Finally, we find evidence that food variety seems to be less important for very old and very young patients, but it substantially reduces the probability of cardiovascular events in the middle age cohorts. (*Dzien, Dzien-Bischinger, Lechleitner, Theurl, Winner*)

4.5.1.5 Prevention: *The Economics of Screening*

Health screening is expected to improve health of participants and decrease long-term health expenditure due to an early detection of presymptomatic medical conditions. Available evidence in medical sciences (usually based on small-scale studies) on the efficiency of mass screening programs is, however, mixed, as the cost and benefits of these exams vary depending on the disease under consideration; see Raffle and Gray (2007, Oxford University Press). Accordingly, most health organizations have recently revised their health screening guidelines.

In our project we evaluate a voluntary mass screening program in Austria. For this purpose, we use individual-level panel data covering 450,000 insureds of the *Upper Austria Health Insurance Fund* over the period from 1998 to 2007. In order to identify causal effects of participation on subsequent health outcomes, we exploit regional variation in screening uptake resulting from general

practitioners' medical service inducement that can be accomplished due to information asymmetry between the doctor and the patient. In other words, we use the fact that selection into screening participation is mainly driven by doctors' inducement. The health outcomes under consideration are extramural health expenditure, drug intake, incidence of hospitalization, sick leave, and mortality. We find no long-run (6-8 years) cost-saving effects of screening. However, we observe an increase in extramural expenditure and hospitalization in the short-run (1-3 years). The latter fact can be explained by subsequent referrals of suspicious cases onto specialists and hospitals for further examinations and treatments. Moreover, there is no evidence for an effect of screening on the incidence of sick leave or mortality in the short and in the long-run. Our results extend the existing literature along two dimensions: (i) we use extensive micro-data and careful econometric identification, and (ii) the focus of the valuation is not only on medical outcomes but also on monetary consequences of screening participation. Overall, we have to conclude that no health-improving or cost-saving effects of screening are discernable, and our results support a more differentiated view of (mass) screening programs as it has been expressed recently by international health officials such as the World Health Organization, the U.S. Preventive Services Task Force, the UK National Screening Committee or the American Cancer Society. (*Hackl, Halla, Hummer, Pruckner*)

4.5.1.6 Primary health care markets: *The Gender Gap in Physician Earnings*

Empirical evidence from U.S. studies suggests that female physicians earn less than their male counterparts. The earning gap does not vanish when individual and market characteristics are controlled for. This research project investigates whether a gender earnings difference can also be observed in a health care system predominantly financed by public insurance companies. It contributes to the empirical research on the gender discrepancy of physician earnings in two ways: First, we use data from a public health insurance system based on Bismarckian principles. Second, we rely on earnings data recorded by the public social security company rather than income reported by the physicians. In particular, we refer to a panel of annual physicians earnings in the Austrian province of Tyrol between 2000 and 2004. This unique data set gives us the opportunity to address important limitations of previous research. Apart from that, we are able to exploit more detailed information on the individual characteristics of physicians, especially on their activity levels and the age-specific utilization of their services. In our sample we observe a gender earnings gap of about 32 percent. Applying the Blinder-Oaxaca framework to decompose earnings differentials, we find that a substantial part of this difference cannot be explained by individual and market characteristics. In qualitative terms, these results are well in accordance with previous studies, suggesting that discrimination might be a robust and persistent phenomenon in the physician labour market, regardless of whether the health care system is dominated by private or public health insurance providers. (*Theurl, Winner*), 2011

4.5.1.7 Primary health care markets: Physician competition and location decision

Empirical analyses of physician density often use the physicians' workforce as a homogenous aggregate. In many health care systems such an approach masks important differences between private and public physicians and may lead to biased results and erroneous health policy conclusions. In this project we therefore focus on the regional distribution of private physicians taking into account the level of public physicians holding a contract with the statutory regional health funds. In particular, we study the economic interaction between the density of private GPs and specialists and their private and public counterparts. By controlling for demand-related physician density determinants such as income, population size, age, and availability of hospitals, we derive evidence whether complementary or substitutive relationships between the physician categories exist. For our empirical analysis we use panel data on physician location/density in Austria from 2001 to 2008. We follow three empirical approaches: (i) Applying a Hausman-Taylor regression model, we find a complementary relationship between public specialists and private GPs. On the contrary, the density of private GPs is negatively influenced by the density of public GPs. Moreover, the existence of a hospital in a district increases the density of private specialists significantly. (ii) We broaden the empirical approach by combining the Hausman-Taylor regression model with spatially weighted variables for physician density. (iii) By applying a Poisson panel estimation we focus on entry and exit decisions of private physicians. We find a significantly negative effect of existing capacities, measured by both private and public physician density of the same specialty, on the entry of new physicians. On the contrary, we find a significantly positive effect of private GPs on the entry of private specialists. Our estimations for market exits basically confirm the entry results. (*Gächter, Schwazer, Theurl, Winner*)

4.5.2 National and international cooperation

Apart from presenting the subgroup's research at conferences and workshops we worked together with international and national partners in the first funding period. For instance, at the international level we cooperated with Eddy van Doorslaer, a well-known health economist at the Erasmus University of Rotterdam. He participated in our NRN workshop in May 2009 where we fruitfully discussed our ongoing research. Moreover, we invited him as a plenary speaker at the annual conference of the Austrian Economic Association that was being held in Linz. His conference talk was on "Socio-economic differences in health over the life cycle" – a topic that fitted perfectly into the subgroups' NRN research. We invited colleagues regularly to the research seminar at the Department of Economics of the University of Linz. For instance, most recently Hendrik Jürges from the University of Wuppertal presented his paper on "Education and health" - in Linz. And finally, one of our members visited Ming-Jen Lin at the National Taiwan University to discuss the projects on screening and obesity.

At the national level, we collaborated with several partners. We have been working together with the Institute for social and preventive medicine in Bregenz. Hans Concini, the head of the institute and our coauthor, guarantees access to preventive and child health data. As a gynecologist he furthermore provided necessary medical input. Cooperation with representatives of medical sciences and medical practice (e.g. Alexander Dzien, Christine Dzien-Bischinger and Monika Lechleitner) has also enlarged the interdisciplinary competence of the group and enabled us to establish a very interesting panel data set on the health status and nutrition. Joint work with Andrea Leiter from the University of Innsbruck increased the econometric competence of the working group in Innsbruck. The cooperation included topics of mutual interest such as the convergence of health and health care financing, economic evaluation of health and health care). The group also cooperated with Franz Piribauer, head of the Austrian Screening Committee. He provided unique mystery visitor data that made further analysis of the effectiveness of health screening possible.

4.6 Experimental Labor Economics

We conducted innovative experiments to examine questions regarding labor supply and the provision of effort. For most parts we have followed precisely the directions outlined in the original project proposal. We have started our work on the project in October 2008. Our research during this time falls on three topics.

First, we have studied *effort provision in response to changing tax incentives, and the cognitive perception of tax*. Our findings imply that the (dis-)incentive effects of a tax to finance redistribution depends on whether taxation is chosen democratically or imposed exogenously on the subjects. We also establish the result that (labor) market participants can be prone to systematic decision biases when deciding about tax policy that changes incentives.

Second, we have started to complement our laboratory experiments and extend them to *more representative environments*. In particular, we have implemented large-scale experiments on the internet with participants from all walks of life to study incentive and sorting effects of performance pay. This part of our work is still in progress. First results show that productivity sorting effects outweigh the incentive effects of performance pay. Moreover, the findings suggest that the sorting decision is systematically affected by observable individual characteristics such as age, gender, and various measures of confidence.

Finally, we have analyzed the question whether increasing competition in work relations give rise to *unethical behavior*, in particular, being dishonest about one's own performance. Our work provides evidence that low performers make higher use of the option to cheat in order to compensate their competitive disadvantage.

Next to our work in these core areas, we accomplished a number of publications on related topics. Over the past 3 years, we have been able to considerably strengthen our collaboration with other members of the NFN network and with researchers in experimental labor economics in general. Limitations inherent to the quality of field data sometimes call for the use of experiments to understand the true underlying causalities. This argument led to fruitful mutual endeavors to start joint research projects with other members of the NFN (see our proposal for the second funding period). We have presented our work in numerous NFN-internal seminars as well as international workshops and conferences. We have organized several workshops with high-profile participants within the profession.

4.6.1 Results and Discussion

We structure this section as follows. We first provide a summary and a discussion of our research on the topics that are precisely aligned to the directions outlined in the original project proposal. On top of that, we briefly discuss a number of projects mostly in the areas of basic research about behavior in social dilemma type of situations with relevant applications to labor economics.

4.6.1.1 Effort provision, tax incentives, and cognitive perception of tax

Our research on this topic aimed at contributing to an empirical understanding of effort provision and incentives provided by tax policy and redistribution. We study this question from two perspectives. First, we measured the incentive effects of taxation and redistribution and evaluate how these effects interact with the institutional environment. Second, we studied how individuals perceive (tax) policy changes in environments (e.g., labor markets) that allow for an endogenous response to a change in incentives (e.g., provision of effort).

We profited extensively from the competence within the network to design innovative experiments suited to measure the effects of exogenous variations on productivity and level of work. In our design, subjects put forward real effort to earn income. We provided incentives so that they worked the amount at which the value of the marginal product just equals the opportunity cost of leisure. Taking this setup as a starting point, we confronted experimental subjects with incentives predicted to reduce effort at work. In *Parolini, Sausgruber, and Tyran* (Working Paper, 2011) we provide evidence that a redistributive tax system has a large disincentive effect. This result supports a main premise of the standard median-voter model of redistribution with endogenous labor supply (e.g. Meltzer and Richard JPE 1981).¹ However, we find that the negative effect on individual effort is lessened significantly if redistribution is chosen endogenously by means of a democratic vote. An advantage of our method is that it enables us to actively tackle the issue of selection. An important finding in this respect is that subjects exhibit the same effort irrespective of whether they voted for or against the imposition of redistribution. This finding suggests that the voting outcome provides a signal about the social desirability of redistribution, which in turn matters for the provision of effort.

Our research provides an example for a case in which participants in the labor market respond to tax changes not in the same way as price changes. From this perspective, our finding also relates to a recent branch in behavioral economics about the perception of tax incentives. For example, Chetty and Saez (NBER-WP 14836, 2009) show that simple manipulations of the information about the marginal tax incentives can lead to significant changes in labor supply and earnings behavior. In *Sausgruber and Tyran* (JPubEc, 2011) we contributed to this question in that we designed an experiment to study the perception of tax-shifting. We find that taxes on “sellers” are more popular than taxes on “consumers” because voters underestimate the extent of tax-shifting in the market. While this result is applicable for markets in general, it may be especially relevant to labor economics. For example, Graetz (Yale Law. J. 2002: 270) claims that “many families underestimate their payroll tax burden because the employers' share is hidden to employees”. As noted by Chetty (NBER-WP 15246,

¹ *Höchtel, Sausgruber, and Tyran* (Working Paper, 2011) extend this setup by allowing for social preferences. In an experiment we study the conditions under which social preferences are more likely to matter for aggregate outcomes.

2009), behavioral patterns in the perception of tax incentives are of vital importance to deriving optimal tax formulas.

4.6.1.2 Incentive and sorting effects of performance pay

Laboratory experiments are necessarily artificial in order to enable us isolating the true underlying causalities. In particular, a prominent objection to experimental labor economics is a lack of external validity because the participants in the experiments are not representative for the general population. Our reaction to this objection was to conduct large scale experiments on a novel internet platform in Denmark. Up to now, we have completed a first wave in this setup with approximately 1000 participants to study the incentive and sorting effects of performance pay (*Sausgruber and Tyran*, in progress). Currently, we are in the process of preparing another wave of experiments on the internet to study the effects effort externalities in team-compensation schemes (see our proposal for the next funding period).

The advantage of our method is that it provides a plethora of variables enabling us to study heterogeneous decisions. Denmark is characterized by an unsurpassed quality of register data. Statistics Denmark (SD) recruits people from the Danish population to login at our experimental website. After completion of an experiment, the experimental data is send to SD and matched with individual-level administrative socio-economic data of the participants. The data is made available to us in a fully anonymous format on a server operated by SD. The approach chosen here is similar to the one in Bellemare, Kröger and van Soest (*Econometrica*, 2008) but our setup is richer and more complex than theirs.

Performance pay matters because of two reasons: self-selection and reactions on the intensive margin (e.g., Lazear AER 2005, Dohmen and Falk AER 2010). We have conducted a real-effort experiment which enables us to cleanly separate between these two types of effects. The participants in this experiment worked under flat incentives (high fixed wage plus low piece rate) or steep incentives (low fixed wage and high piece rate). We study the rationality of the sorting choice and observe the labor supply, both of participants who choose their preferred scheme and those who are exogenously assigned to a scheme.

Conducting a large-scale experiment over the internet requires extensive preparatory work, such as pretesting and elaborating on the comprehensibility of instructions by means of professional focus groups. We have completed the first wave of internet experiments on this topic in December 2010. At this stage we can only report preliminary results from this study. A prominent finding is that performance pay increases effort because of productivity sorting rather than due to an incentive effect. The sorting decision is highly rational in the sense that subjects overwhelmingly choose the payment scheme that earns them more conditional on their productivity. We find that gender, age, and attitudes towards risk matter for sorting. Consequently, women, elder people, and those characterized by a higher degree of risk aversions earn less in our experiment because they are less likely to sort into

steep incentives. These findings are in line with existing research, for example, to explain why females earn lower wages than males and are underrepresented among senior positions (see, e.g. Niederle and Vesterlund QJE, 2005; Weber and Zulehner AER, 2010). An important advantage of our research design is that it enables us to take one step further. For example, we can explore whether the sorting decision in our experiments is associated with *real-world* occupational decisions.

4.6.1.3 Work incentives and unethical behavior

Unethical behavior, for example, in the guise of fraud and theft, costs the economy billions of dollars every year (see, Mazar, Amir Ariely, JMarketingRes, 2008). Unethical behavior is of high relevance also to labor economics. For instance, Greenberg (JApplPsychol, 1990) found that employee theft increased after a wage cut that was perceived as unjust. Our research aims at identifying determinants of unethical behavior by means of controlled exogenous experimental manipulation.

In *Schwieren and Weichselbauer* (JOEP, 2010) we experimentally tested whether competing for a prize induces workers to cheat. Recent doping scandals in sports as well as forgery and plagiarism scandals in academia have been partially explained by “competitive pressures”, which suggests a link between competition and cheating. In our experiment subjects conducted a task where they had the possibility to make use of illegitimate tools to better their results. We found that low performers reacted much stronger to competitive pressure by increasing their cheating activity. Incidentally, we chose a task in which women on average do worse than men. The analysis showed that is the ability of an individual to conduct a particular task, and not sex, which affects the reaction to competition. Poor performers significantly increase their cheating behavior under competition which may be a face-saving strategy or an attempt to retain a chance of winning. In a follow-up on this study by *Weichselbaumer, Schwieren and Brandts* (mimeo, 2008) we studied the effects of competition on trusting behavior. The results of this study are of particular relevance for labor markets organized as gift-exchange.

In *Pruckner and Sausgruber* (JEEA, Revise&Resubmit,) we aim at contributing to a broader understanding of ethical behavior in a different context by the use of normative appeals. We observe that appealing to honesty causes no movement on the extensive margin, whether one is honest or not, but there is a shift in the observed level of honesty. These findings are consistent with a model of honesty according to which people want to appear honest before themselves, without fully forgoing all benefits of being dishonest, though. A particularly interesting finding of our study is that the positive effect persists to the time after the honesty has been removed. This suggests normative appeals as an effective non-price way, e.g., to reduce employee theft. Our results also point to the relevance of the characteristics of the sample, to which the appeal is directed. In *Fellner, Sausgruber, and Traxler* (JEEA, Revise&Resubmit) we find no effects on ethical behavior in a setup where messages containing a normative appeal were sent to a selected sample that consisted of the bottom of the

population in terms of moral/legal attitudes. Our work on this topic is relevant to the study of tax evasion and labor supply (see, our collaboration with Joel Slemrod proposed for the next funding period).

4.6.1.4 Other related topics

Besides our main work on the outlined topics, we have accomplished a number of publications mostly in areas of basic research on social dilemmas. Modern work organizations provide many examples of social dilemma type of situations. For example, we frequently observe situations in which every individual benefits from joint output (of the firm or a work team) regardless of whether he or she bears the cost of individual effort.

Sausgruber (ExperEcon, 2009) ran an experiment to test for peer effects between teams. The subjects performed a team-work task in pairs of payoff-independent teams. They received feedback about the outcome of the own and the paired team. Consistent with peer effects, the author found that this feedback induced substantial correlation of effort choices between teams. The correlation translated into the variation of outcomes within and across pairs of teams. These findings can have potentially important implications for the organization of work. In particular, regarding the correlation of effort between teams the results suggest that providing teams with mutual information about their performance contributes to a reduction of the variation of output. Depending on the setting (e.g., product assembly, R&D), this feature can be desirable or not. The results may also have implications for the compensation of work. Assume that a firm provides pay based on the relative performance of work teams; peer effects of the sort we have observed in our experiment might then interact with the cost of providing these direct incentives.

In *Rauchdobler, Sausgruber and Tyran* (FinanzArch, 2011) we investigated if introducing a threshold to a public good that does not have a specific threshold value for technological reasons (e.g. a commitment to a minimal output in team work) can increase efficiency. In theory, this effect is warranted if introducing a threshold in the sense of a minimal project size transforms a public goods game with an inefficient equilibrium into a coordination game with a set of Pareto-superior equilibria. Our main findings were that thresholds are counterproductive. While higher thresholds were generally associated with higher effort contributions, the contributions often did not increase sufficiently to match the more ambitious thresholds. Higher thresholds induced the belief that others will more generously contribute which increased contributions somewhat, but these beliefs were excessively optimistic. As a result, contributions often failed to meet the threshold.

In *Kerschbamer, Rauchdobler, Sausgruber and Tyran* (Working Paper, 2011), we explored the possibility to overcome a free-rider problem by means of non-binding agreements. Theory predicts that non-binding agreements can increase efficiency if the actions of the players are strategic complements (e.g., team production with positive returns to scale). In our experiment we found that the investigated mechanism enhanced efficiency regardless of whether actions are strategic

complements or strategic substitutes. We explain this finding with social preferences according to which people feel morally obliged to adhere to an agreement.

4.6.2 National and international cooperation

Over the last funding period, at the national level we collaborated with *Gerlinde Fellner* (Vienna University of Economics and Business), *Rudolf Kerschbamer* (University of Innsbruck), *Gerald Pruckner* (University of Linz), and *Julian Rauchdobler* (University of Innsbruck). We hired *Arno Parolini* and *Peter Schwazer* (both University of Innsbruck) and *Alexander Rabas* (University of Vienna) as Pre-Doc students. Arno Parolini is co-author of ours on several projects. Peter Schwazer provided valuable computer assistance in programming and conducting our experiments, and he is co-author on a number of projects of the NFN working group “*Health*”. Alexander Rabas collaborates with us on the development and analysis of internet experiments. Arno Parolini and Peter Schwazer shall be able to accomplish their dissertation by the end of this year. Alexander Rabas has started his position only in February 2011.

Our research on topic 1 and 3 has benefitted especially from valuable input from *Rudolf Winter-Ebmer* (University of Linz). Rudolf Winter-Ebmer will also be collaborator in one of our projects proposed for the upcoming funding period. *Johann Brunner* (University of Linz) provided valuable input to topic 1, and he made a number of excellent comments which helped us further improving our research design for Topic 1, Module B in our proposal for the second funding period. *Andrea Weber* (University of Mannheim) and *Christine Zulehner* (University of Linz) provided valuable input on our research on topic 3 and our plans to study labor market discrimination (Topic 2 proposal for the second funding period). Christine Zulehner is co-author of *Doris Weichselbaumer* (University of Linz) on the outlined project on labor market discrimination. We are thankful to *Martin Halla* (University of Linz) for very helpful discussions on our research on Topic 3. Most of our national collaborators are active members of the “*The Austrian Center for Labor Economics and the Analysis of the Welfare State*”.

At the international level we have closely collaborated with *Jean-Robert Tyran* (University of Copenhagen). Jean-Robert Tyran has recently joined the University of Vienna as Professor of Public Economics and is now, jointly with *Rupert Sausgruber* (University of Innsbruck), co-applicant on our proposal for the second funding period. During the last funding period other co-authors of us have been *Jordi Brandts* (Universitat Autònoma de Barcelona), *Christiane Schwieren* (University of Heidelberg), and *Christian Traxler* (Max Planck Institute Bonn).

The work within the project has contributed significantly to the international visibility of our research units. We have started and intensified our international collaborations, e.g. *Sasha Becker* (University of Warwick) and *Joel Slemrod* (University of Michigan). We have constantly presented the outcome of our work at international conferences (e.g., Annual Meeting of the American

Economic Association; Atlanta 2010) and have published in international journals (e.g., Journal of Public Economics, Journal of the European Economic Association, Experimental Economics). Finally, we have organized a number of workshops with high-profile participants (e.g., 3rd, and 4th Workshop in “Behavioral Public Economics” in Copenhagen 2008 and Venice 2009, respectively). For July 14-15 2011, we have scheduled a “*Workshop in Experimental Labor Economics*” at the University of Vienna, with the following list of presenting (external) participants: Jordi Brandts (Barcelona), Alexander Cappelen (NHH Bergen), Gary Charness (UCSC), Uri Gneezy (UCSD), Muriel Niederle (Stanford), Imran Rasul (UCL), Joel Slemrod (Michigan), and Bertil Tungodden (NHH Bergen).

4.7 Taxation and Income Distribution

Research in this subproject has focused on the revenue side of the welfare state, mainly from a theoretical point of view. The objective was to improve our understanding of the optimal tax structure when both efficiency and redistribution are taken into account. In particular, we studied the potential role of additional taxes, especially those on bequests, capital income and consumption, to supplement the labor income tax. As a starting point we took the well-known result by Atkinson and Stiglitz (1976, JPubE), which essentially says that the latter tax alone is a sufficient instrument, as welfare is not improved if part of the revenues is raised through other taxes.

Our approach was to extend the Mirrlees-type model of optimal taxation (which provides the framework for the Atkinson-Stiglitz result) to include realistic elements that have mostly been neglected so far in the literature. One such element we investigated in detail is the fact that individuals differ not only in labor productivity (as is usually assumed) but also in (inherited) wealth. This is especially important for the analysis of the bequest tax (or any wealth-related tax), because the intergenerational transmission of wealth indeed creates differences in capital endowments. We showed that taking account of this fact gives rise to a welfare-improving role of taxes on bequests and on consumption, and this holds independently of whether one assumes a joy-of-giving or an altruistic bequest motive, and even if part of the respective tax basis is evaded.

Further, we conducted research on the role of uncertainty for the optimal tax structure. Incorporating the fact that individuals are uncertain about their future wage level, we found that a capital income tax is indeed desirable in addition to a labor income tax, because it provides insurance against wage uncertainty. We also contributed to the growing literature on optimal policy issues in the presence of relative consumption concerns. The fact that individuals compare their consumption for some goods with the consumption levels of others seems well established by now, but the effect on optimal policy is still a subject of ongoing research. In a first paper, we studied the optimal tax mix (on income and commodities) if there are both positional and nonpositional goods.

Empirical research within the project focused on the pension system, in particular on the regulations for early retirement. These regulations are known to be rather generous in Austria, with the consequence of an average retirement age below 60, while the statutory retirement age is 65 for men and 60 for women. We calculated actuarially fair (or neutral, in the sense that early retirement does not impose a burden on the public pension system) pension reductions per year of early retirement on the basis of past earnings careers of a sample of (early) pensioners in 2008. These fair reductions turned out to be considerably higher than the actually applied ones.

4.7.1 Results and Discussion

The outcome of our research in the first NFN period is documented in a number of papers. In the following we summarize and discuss our main findings.

4.7.1.1 Optimum taxation of inheritances

The standard approach to analyze bequest taxation in an optimum taxation framework (e.g., Blumkin and Sadka 2003, JPubE) is based on the Mirrlees model, where individuals differ in labor productivity only, and deals with the question of whether leaving bequests – as a special way of spending income – might represent a reason for a specific tax. However, this immediately leads one to the well-known Atkinson-Stiglitz theorem, which essentially says that an optimal tax on labor income alone is a sufficient instrument to raise tax revenues and redistribute income. As a consequence, bequest taxation has no role in this approach. Even a subsidy turns out to be optimal (Farhi and Werning 2010, QJE), because bequests create twofold utility: for the donor and the donee (a positive external effect).

In our paper we extended the basic model by the essential consequence of intergenerational wealth transfers: inheritances create a second distinguishing characteristic of individuals, in addition to earning abilities. We incorporated this fact into an optimum income taxation model with bequests motivated by joy of giving, and with a stochastic relation between inheritances and earning abilities. We showed that a tax on inherited wealth is equivalent to a uniform tax on consumption plus bequests. Both taxes are desirable according to an intertemporal social welfare function if, on average, high-able individuals inherit more wealth than low-able. We demonstrated that such a situation results as the outcome of a process with stochastic transition of abilities over generations, if all descendants are more probable to have their parent's ability rank than any other. (*Johann K. Brunner and Susanne Pech*)

4.7.1.2 Optimum taxation of bequest in a model with initial wealth

In this paper we analyzed the welfare effect of bequest taxation in a dynastic model. That is, in contrast to the above-mentioned paper (Brunner and Pech 2008) we assumed that generations are linked via altruistic preferences (Barro 1974, JPE), where parents directly care for the welfare of their descendants. We formulated an optimal-taxation model of three generations, where each consists of the same number of individuals and parents leave bequests to their immediate descendants. In contrast to the standard model, we assumed that individuals in the first generation differ not only in earning abilities, but also in initial wealth. We showed that in this model a redistributive motive for a bequest tax in later generation arises, given that initial wealth increases with earning abilities. Moreover, taxing bequests of one generation turned out to be equivalent to uniformly taxing all expenditures of the subsequent generation. The introduction of these taxes increases intertemporal social welfare or has an ambiguous effect, depending on whether the external effect related to altruism is accounted for in the social objective. (*Johann K. Brunner and Susanne Pech*)

4.7.1.3 Optimal taxes on wealth and consumption in the presence of tax evasion

In this paper we took into account the fact that inherited wealth might not be fully observable as it is suggested by the two papers above. In particular, we argue that financial wealth can easily be concealed from tax authorities by moving assets offshore or by simply not reporting the true amount of wealth. Another important issue in tax policy is the evasion of indirect taxes, such as the value added tax in the European Union. Accordingly, we extended the optimum taxation model by allowing individuals (with differing abilities and wealth) to evade taxes on wealth and consumption at some cost and we analyzed whether taxes on wealth and on consumption are still adequate instruments in such a framework. Thus, we combined the issues of tax evasion and optimal taxation, which by most part of the literature have been analyzed separately (exceptions are e.g. Cremer and Gahvari 1993, and Boadway et al., 1995, both JPubE, in a different context).

We found that despite the possibility of its evasion a tax on initial (inherited) wealth should supplement the optimal nonlinear income tax, given a positive correlation between wealth and earning abilities. Further, even if income and initial wealth are taxed optimally, it is still desirable to levy a tax on commodities, though it can be evaded as well. Accordingly, our result provides a rationale for a comprehensive tax, as we find it in most industrialized countries. Optimal tax rates on commodities differ in general, however for the special case of a uniform evasion technology it turns out that equal rates are optimal if preferences are homothetic and weakly separable. (*Johann K. Brunner, Paul Eckerstorfer and Susanne Pech*)

4.7.1.4 Die Erbschaftssteuer im Modell der optimalen Besteuerung

In this survey paper the bequest tax is discussed in a broader context. Various arguments of the public debate are confronted with the results from the standard optimal-taxation model. The most striking discrepancy is that the latter suggest a subsidy of wealth transfers as the optimal solution (Farhi and Werning 2010, QJE), while the public debate is on whether or not bequests should be taxed. The main reason for this discrepancy seems to be the restricted framework of the optimal-taxation approach, which does not allow for other characteristics than labor productivity, in particular not for differences in inherited wealth. Proponents of the bequest tax, on the other hand, frequently stress its role in increasing equality of opportunity. The paper surveys how an incorporation of this idea changes standard optimal-taxation results. (*Johann K. Brunner*)

4.7.1.5 Optimal capital income taxation and wage uncertainty

In this paper we accounted for the fact that uncertainty about the future labor income is an essential feature in most people's working life. In particular, we contributed to the rather scarce literature investigating the implications of wage uncertainty for the optimal tax mix (see Hamilton 1987, IER,

for the capital income tax in a two-period model with human capital investment as well as Cremer and Gahvari 1995a, JPubE; 1995b, EJ, for commodity taxation in a one-period model).

We considered a two-period model with ex-ante identical and risk-averse individuals who work in each period. While they know for sure the level of their present wage rate, they are uncertain about the wage rate they will receive in the future. We found that in such a framework it is optimal to supplement a linear labor income tax with a capital income tax. The linear tax on the future labor income is useful for efficiency reasons as it reduces the gap between the uncertain income levels. However, it provides only partial insurance. Hence, compared to the full insurance case, risk-averse individuals still postpone too much consumption to the future. Therefore, a tax on capital income can serve as a corrective tax as it induces the individuals to save less. Combined with an appropriate adaptation of the tax on future labor income it allows for insurance protection above the extent which is possible with a labor income tax alone. Moreover, given that present and future leisure are substitutes, a positive marginal tax rate on present labor income was found to be part of an efficient solution, because it counteracts the distortion caused by the tax on future labor income. (*Susanne Pech*)

4.7.1.6 Optimal mixed taxation in the presence of relative consumption concerns

In the final year of the first NFN period we also started with research on the effect of relative consumption concerns on the optimal tax structure. Most part of the optimal taxation literature assumes that the utility of individuals depends only on their own consumption of goods and leisure. However, there is increasing empirical evidence suggesting that individuals value not only their own absolute consumption but also their relative consumption with respect to others (see for example Clark et al. 2008, JEL). Moreover, there is also empirical evidence indicating that some goods are more positional than others (e.g. Solnick and Hemenway 2005, AER). In accordance with this empirical evidence we constructed a model that allows us to analyze the optimal tax mix (income and commodities) when some but not all goods are positional. By putting a special emphasis on the taxation of commodities we contributed to the literature on optimal policy issues in the presence of relative consumption concerns which mainly considered the optimal income tax and the optimal provision of public goods (e.g. Aronsson and Stenman-Johansson 2008, JPubE; Micheletto 2010, JPET).

We found that in general the whole tax system is affected by the externalities induced by the consumption of the positional goods, notably also the taxes on income and on the nonpositional good. Thus, the ‘additivity property’ first discovered by Sandmo (1975, SJE), which states that an externality is best addressed by imposing a tax directly on the externality-generating good, does not apply. The tax rates on the positional goods are higher than in the absence of status effects, reflecting their

Pigouvian role. Further, it is shown that with plausible assumptions the Pigouvian part in the income tax schedule is progressive. *(Paul Eckerstorfer)*

4.7.1.7 A note on optimal redistributive taxation in a multi-externality model

The main contribution of this note is to extend the previous literature on optimal redistributive taxation in the presence of externalities (e.g. Cremer et al. 1998, JPubE; Kopczuk 2003, EL; Micheletto 2008, JPubE) to a multi-externality setting. In contrast to the paper on the mixed taxes case in the presences of relative consumption concerns (see above), externalities are assumed to be of the ‘atmospheric’ type, i.e. the externalities are created by the total consumption of a specific good. While taxes on income and on ‘clean’ commodities are still unaffected by the externalities confirming previous results (e.g. Kopczuk 2003, EL), we found that the existence of more than one externality-generating commodity has important implications for the optimal Pigouvian tax rates. The Pigouvian parts of taxation depend in general also on the externalities induced by the consumption of the other commodities, implying that the interdependence of the externality-generating commodities is indeed relevant for optimal tax policy. *(Paul Eckerstorfer)*

4.7.1.8 Versicherungsmathematisch korrekte Pensionsabschläge (Actuarially fair public pension reductions in case of early retirement)

A well-known problem of the public pension system in many countries is that most individuals retire much earlier than at the statutory age. This is especially the case in Austria, where the actual average retirement age is below 60, while for most groups of employees the statutory age is 65 for men and 60 for women. There are studies which show that the generosity of the pension system represents a major incentive for individuals to retire early (Gruber and Wise 1999, AER; Hofer and Koman 2006, Empirica). As a consequence, there is an intensive debate on what are the appropriate rules for a reduction of the pension claims in case of early retirement.

In this project we calculated (for the first time) actuarially fair or neutral pension reductions for the Austrian public pension system, on the basis of a sample of earnings careers of employees retiring in 2008. Of course, actuarial fairness is not a well-defined concept in a pay-as-you-go system (as opposed to a funded system), so the idea was to find those reductions which imply that early retirement of an individual does not impose an additional burden on the pension system. Our main finding was that for men the statutory reductions in Austria (4,2% per year of early retirement) are considerably lower than neutral ones (which vary between 5% and 8% for different groups). Moreover, individuals retiring early were on average found to have a higher past income and a less disconnected employment career than individuals retiring later. *(Johann K. Brunner and Bernd Hoffmann)*

4.7.2 National and international cooperation

On the national level we have established cooperation with Hannes Winner of the University of Salzburg. He has a particular expertise in empirical public economics, documented by a number of publications in high-rated journals (e.g. Egger et al. 2010, JIntE; Egger et al. 2010, EER). The aim of this cooperation, which will be put on a formal basis in the second NFN period (Hannes Winner will join our group), is to broaden the expertise in our group. In particular, we will study the Austrian tax and transfer system and the Austrian income distribution from an empirical perspective (first steps have already been undertaken). As in the first period our focus was on the theoretical analysis of optimal tax systems, such more empirical oriented analyses are an important complement to our project. Research on issues of retirement timing and income distribution evolved in close cooperation with the Subprojects AGING and HEALTH.

On the international level our group has participated actively in meetings of the scientific community. We presented and discussed our work at a number of international conferences, e.g. at the annual congresses of the EEA, IIPF or APET. In addition we presented our papers at a number of workshops and research seminars, e.g. at the University of Zürich or at the Free University of Berlin.

In April 2011 we will host a workshop on *Taxation and Redistribution* in Linz, to which some of the most active researchers in the field agreed to present papers. We will use this meeting to discuss our work with them and to intensify our international contacts.

4.8 Bayesian Econometrics

The relevance of empirical research in economics not only depends on a high quality data base but also on employing appropriate econometric methods. The analysis of longitudinal individual data, in particular, for discrete dynamic panels, requires highly structured, flexible econometric models where the model specification depends on latent variables. A typical example is the application of random-effects models to discrete dynamic panel data to capture unobserved heterogeneity.

Econometric estimation of such models is far from straightforward and Bayesian inference using Markov chain Monte Carlo (MCMC) methods often is the only feasible approach. However, the application of the Bayesian approach to panel data techniques is a matter of routine only for Gaussian data. One major scientific achievement during the first period of the project has been to develop new and efficient simulation-based algorithms for Bayesian estimation of various econometric models for discrete-valued panel data which are based on the idea of auxiliary mixture sampling.

In addition to efficient estimation, correct model specification is of great importance to obtain valid and accurate econometric inference. The Bayesian approach offers a principled and coherent way of model discrimination. Another major scientific achievement during the first period of the project has been to develop new techniques for computing marginal likelihoods and implementing model space MCMC methods which are based on auxiliary mixture sampling. These techniques have been applied during the first period of the project to model selection problems such as choosing the link function in binary models, testing for the presence of unobserved heterogeneity in panel data models, and selecting the number of clusters in model-based clustering based on finite mixture models.

A final major scientific achievement during the first period of the project has been the development of clustering technique for discrete-valued panel data, in order to deal with unobserved heterogeneity in panels of individual wage data. Following the framework of model-based clustering of time series, clustering is achieved by formulating dynamic finite mixture models for panels of transition data based on time-homogeneous first-order Markov chains. Using panels from the ASSD, this technique is applied to analyze unobserved heterogeneity in life-time wage careers in the Austrian labour market.

4.8.1 Results and Discussions

4.8.1.1 Efficient MCMC algorithms for practical Bayesian inference for discrete-valued models

The estimation procedures developed in this project are based on the auxiliary mixture sampling approach introduced by Frühwirth-Schnatter and Frühwirth (CSDA, 2007) for the Bayesian estimation of binary and multinomial logit models. The method relies on the random utility model (RUM) representation introduced by McFadden (1974) and exploits data augmentation through the latent

utilities. Simple MCMC estimation is implemented by approximating the distribution of the non-Gaussian latent error distribution by a mixture of normal distributions. Two major improvements of the original sampler of Frühwirth-Schnatter and Frühwirth (2007) have been developed.

Frühwirth-Schnatter, Frühwirth, Held, and Rue (2009) showed how to improve auxiliary mixture sampling under repeated measurements by aggregating the latent utilities in the RUM representation. This sampler allows the efficient estimation of models for count data, based either on the Poisson or the negative binomial distribution.

Frühwirth-Schnatter and Frühwirth (2010) achieved a remarkable improvement of auxiliary mixture sampling by using the differenced RUM representation instead of the RUM representation. The latent errors in this model follow a logistic distribution which is symmetric and thus easier to approximate by a mixture of normal distribution than the type I extreme value distribution in the RUM representation. This improved auxiliary mixture sampling renders the Bayesian estimation of any binary or multinomial model with and without unobserved heterogeneity or any other latent structure feasible and leads to fast MCMC algorithms which are easily implemented even for complex models because they require draws from standard distributions, only. Comparisons of this sampler to other MCMC techniques like the Metropolis-Hastings algorithm (Rossi et al., 2005) and the data-augmented Metropolis-Hastings algorithm (Scott, 2011) revealed that this new auxiliary mixture sampling is more efficient and much easier to implement.

Auxiliary mixture sampling was applied in various areas that are relevant for the research network:

- in Frühwirth-Schnatter and Wagner (2010) to perform stochastic model specification search for non-Gaussian state space models;
- in Frühwirth-Schnatter, Pamminer, Weber, and Winter-Ebmer (2010) to implement the mixtures-of-experts extension of finite Markov chain mixture models;
- in Frühwirth-Schnatter and Wagner (2011) to estimate logit random-intercept models for binary repeated measurements.

Finally, the methods were applied in *Frühwirth-Schnatter (2011b)* to discriminate between a logit model and alternative binary model specifications such as the probit and the robit model. This paper develops an additional technique for boosting MCMC for logit and other binary models which may be written as scale-mixture of probit models. Boosting is based on marginal data augmentation in the spirit of Imai and van Dyk (2005), by introducing an unidentified working parameter. This modified MCMC scheme improves efficiency for the main effects in the model considerably with practically no additional computational cost.

4.8.1.2 Bayesian model selection and stochastic model specification search for latent variable models

Model selection in a traditional Bayesian framework is based on determining the posterior probabilities of each model by computing marginal likelihoods, which is a challenge in itself for latent variable models for discrete-valued data. In the recent literature on Bayesian model selection, focus has shifted from marginal likelihoods toward efficient MCMC algorithms for stochastic model specification search which are based on choosing Bayesian shrinkage priors, such as spike-and-slab priors, Bayesian Lasso priors or normal-Gamma priors.

Bayesian model selection based on marginal likelihoods was implemented for various models, with or without unobserved heterogeneity. *Frühwirth-Schnatter and Wagner (2008)* showed how marginal likelihoods may be computed for non-Gaussian models using auxiliary mixture sampling. The draws available from auxiliary mixture sampling are used for the computation of marginal likelihoods using Chib's estimator or bridge sampling estimators for arbitrarily complex dynamic panel data models. This method is applied to testing for the presence of unobserved heterogeneity in binary panel data.

Frühwirth-Schnatter (2011b) uses marginal likelihoods to choose the appropriate link function in models for binary data. Correct model specification for binary data by testing between the logit and the probit transform is of great importance to obtain valid econometric inference for these models, see e.g. Hausman and McFadden (1984). To make the different model specifications comparable, it is suggested to adjust the scaling of the prior of the regression coefficients either according to the scaling of the error distribution in the underlying random utility model or by matching the effect of the different priors on the choice probabilities. It is shown that without such an adjustment spurious evidence in favor of a certain model specification may result.

Various efficient algorithms for stochastic model specification search for non-Gaussian models were developed. These algorithms are based on the data augmentation scheme underlying auxiliary mixture sampling. *Frühwirth-Schnatter and Wagner (2010)* apply this method to perform stochastic model specification search for Gaussian and non-Gaussian state space models. These methods are relevant for any panel data model containing time-varying effects.

Frühwirth-Schnatter and Wagner (2011) consider stochastic model specification search for Gaussian and non-Gaussian random-intercept models and discuss an application to a logit model with repeated measurements. They show that for panel data the issue of stochastic model specification based on Bayesian shrinkage priors is closely related to capturing unobserved heterogeneity. They derive various non-Gaussian random-effects distributions as Bayesian shrinkage priors for the random effects and show that these choices protect econometric inference against misspecification and overfitting at the same time.

Finally, *Frühwirth-Schnatter (2011a)* combines the marginal likelihood approach with Bayesian shrinkage priors in finite mixture models which are a very popular tool for model-based clustering. A critical issue in this context is choosing the right number of components or clusters. It is shown that the marginal likelihood provides a reliable tool for selecting the number of clusters only, if appropriate prior distributions are selected. For instance, if not all coefficients of the cluster-specific parameters are actually different, then shrinkage priors like the Lasso prior or the normal-Gamma prior avoid underfitting of the number of clusters. Depending on the hyperparameters of the Dirichlet prior of the group sizes, either the total number of components or the number of non-empty components is a better estimator of the number of clusters.

4.8.1.3 Model-based Clustering of Dynamic Discrete-valued Panel Data

A rather recent approach to deal with unobserved heterogeneity in panels of individual transition data is to assume that unknown segments or groups are present in the labour market with a group-specific mobility behaviour differing across groups. Following the framework of model-based clustering of time series introduced by *Frühwirth-Schnatter and Kaufmann (2007)*, clustering is achieved by formulating appropriate dynamic finite mixture models. The framework of model-based clustering is particularly useful for clustering panels of categorical time series, where the application of more traditional clustering techniques is hampered by the difficulty of defining appropriate distance measures.

Pamminger and Frühwirth-Schnatter (2010) developed two approaches for model-based clustering of categorical time series based on finite mixtures of time-homogeneous first-order Markov chains. In *Markov chain clustering*, the individual transition probabilities are fixed to a group-specific transition matrix. In *Dirichlet multinomial clustering*, the rows of each individual transition matrix deviate from the group mean and follow a Dirichlet distribution with unknown group-specific hyperparameters. Estimation is carried out through Markov chain Monte Carlo. Various well-known clustering criteria are applied to select the number of groups. Both clustering methods are applied to clustering a panel of Austrian wage mobility data describing the wage career of nearly 10000 young men entering the labour market during the second half of the 1970s. Both clustering kernels were able to identify four sensible types of wage careers, although important covariates like education or profession were unobserved.

Hence, Markov chain clustering turns out to be a sensible tool for model-based clustering of discrete-valued panel data, in particular, if no background information is available.

Frühwirth-Schnatter, Pamminger, Weber, and Winter-Ebmer (2010) extend clustering of discrete-valued panel data further through mixtures-of-experts Markov chain models. This model formulation assumes that the prior probability to belong to a certain cluster depends, via a multinomial logit model, on individual characteristics such as the type of skill and occupation and on local labour market characteristics at the time of entry. Dummy variables for the initial states are added to these

covariates to deal with the initial condition problem inherent in any discrete dynamic model with unobserved heterogeneity. To analyze patterns in the earnings development of young labour market entrants over their life cycle, mixtures-of-experts Markov chain is applied to a panel from the ASSD of 49279 male Austrian workers, who entered the labour market for the first time in the years 1975 to 1985 and were less than 25 years old at entry.

As in Pamminer and Frühwirth-Schnatter (2010), four distinctly different types of wage careers are identified, namely “upward”, “static”, “downward” and “mobile”. The analysis of the determinants of group membership shows that there is a strong effect of the labour market condition at career start on mobility patterns throughout the lifetime. High unemployment rates in early years prevent young individuals from entering a career that would transport them to stable jobs at the upper end of the earnings distribution. This result about the impact of labour market conditions on mobility patterns offers an interesting explanation for the high persistence of initial earnings differences documented in the literature. If career types are determined early in life, the unfavourable impact of adverse labour market conditions on the choice of mobility patterns could lead to long term differences in the observed earnings trajectories.

Pamminer and Tüchler (2011) apply mixtures-of-experts Markov chain clustering to investigate the influence of having children on the wage career of women. They analyze patterns in the earnings development of female employees in order to identify groups of similar transition patterns between discrete earnings states and investigate the effect of having children and/or going on maternity leave on the individual probability of belonging to each of these groups.

Finally, *Frühwirth-Schnatter (2011c)* provides a comprehensive review of model-based clustering of time series which has been invited by ADAC (Advances in Data Analysis and Classification).

4.8.2 National and international cooperation

We collaborated actively with the subprojects AGING and LABOR MARKET POLICY on an application of clustering of discrete-valued panel data through mixtures-of-experts Markov chain models. The application to earnings dynamics and the long-term consequences of early life events turned particularly fruitful because, on the one hand, the economic problem was difficult to solve with traditional econometric methods and on the other hand, the specific problem of understanding why different clusters evolve (or what individual characteristics are correlated with specific clusters) led to the extension of the Bayesian framework to include multinomial logits to model prior probability to belong to a certain cluster.

Further applications on the impact of plant closures on retirement to solve a long-standing question about heterogeneous impact of such events on individual workers are under way as well as collaborations with the HEALTH group on child health and development and with the INDUSTRY

DYNAMICS AND MARKET STRUCTURE group on new estimation techniques to address issues of unobserved heterogeneity in models with discrete dependent variables in industrial organization.

The cooperation of Sylvia Frühwirth-Schnatter with Rudolf Frühwirth and Leo Held lead to a substantial improvement of MCMC estimation based on auxiliary mixture sampling for latent variable models for binary data and is published in Frühwirth-Schnatter, Frühwirth, Held and Rue (2009). Sylvia Frühwirth-Schnatter with Rudolf Frühwirth continued this work further, see Frühwirth-Schnatter and Frühwirth (2010).

The cooperation of Sylvia Frühwirth-Schnatter with Liana Jacobi and Helga Wagner is ongoing research, started in September 2010, on Bayesian analysis of the labor market effects of a mother's time spent at home after childbirth, using data from the ASSD. The project exploits the variation in time spent at home as a result of a recent change in the parental leave policy in Austria (Lalive, Schlosser, Steinhauer and Zweimüller, 2010) in the context of a Bayesian treatment effects model for multilevel treatments and panel outcomes with variable selection to estimate the effects of the time spent at home on the mother's subsequent labor market performance.

The cooperation of Christoph Pamminger with Regina Tüchler started in October 2009 and investigates the influence of having children on the wage career of women. More precisely, they analyze patterns in the earnings development of female employees in order to identify groups of similar transition patterns between discrete earnings states and investigate the effect of having children (and/or going on maternity leave) on the individual probability of belonging to each of these groups. This project cooperated in terms of data and modelling issues closely with the subproject AGING.



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