



Final Report
Leibniz Competition

Economic Uncertainty and the Family (EcUFam)

Application number: P77/2014

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01.07.2015 – 30.06.2020

Leibniz Institute in charge:

ifo Institute - Leibniz Institute for Economic Research at the University of Munich - ifo Center for Labor and Demographic Economics

Project leader:

Prof. Natalia Danzer, Ph.D. / Prof. Helmut Rainer, Ph.D

Reporting guidance

The final report must be submitted to Leibniz Headquarters no later than 6 months after the end of the authorised project and must not exceed 5 pages in length.

The report should provide information about the project's progress, in terms of the milestones and objectives of both the project itself and of the overarching Leibniz objectives of the Leibniz Competition grants, for the Senate's Competition Committee (SAW). The SAW takes note of the reports and may use them to inform its view of the project's progress in dealings with the project leader.

In addition to the report please fill out the forms in the electronic application system, including the executive summary (max. 400 words). Record information about results and successes (publications, transfer etc.), equal opportunities, internationalisation and networking using the tables available in the system.

The final report may be written in German or English.

Please observe the following requirements in terms of formatting and page layout:

- Page margins: The right, left and top margins should be set to 2.5 cm, the bottom margin should be 2 cm.
- Font and font size: Please select Arial as the font, and 11 pt for copy text, 14 pt for the main heading, and 11 pt for subheadings.
- Line spacing: Single line spacing. The line spacing after headings and paragraphs is 6 pt.
- Tables: The same rules apply to any tables, charts, etc.

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1. Achievement of objectives and milestones

The project “Economic Uncertainty and the Family” (EcUFam) under the funding line “Promoting Women for Academic Leadership Positions” had two main objectives: First, to promote the female junior research group leader’s academic career, by fostering her scientific profile and network as well as her academic leadership skills, and to provide an inspiring and supportive environment for the academic training of the doctoral junior researchers in the research group. Second, to produce scientific internationally recognized research on the importance of economic uncertainty, local labour market conditions, and family-related policies for key family outcomes, such as fertility, health, family formation and stability and intra-household gender inequality. The research program was divided into three modules.

With respect to the first objective, several milestones were successfully achieved: The junior research group leader, Natalia Danzer, benefited from the project scientifically as well as in terms of capacity building and strengthening her leadership skills, e.g., by participating in the Leibniz Mentoring Programme. She was offered a professorship (W2) at the Freie Universität Berlin at about halfway of the project period and took up the position as Professor for Economics, with a special focus on Empirical Economics and Gender in August 2018. During the remaining project period, Helmut Rainer took over the EcUFam project leadership. Natalia Danzer remained involved in selected sub-modules. Three of the four Ph.D. students involved in the EcUFam research project finished their dissertation successfully during the period under review or shortly afterwards. Two of them received very good placements as Assistant Professors (tenure track) at internationally renowned universities. A further success is that the second Post-Doc involved in the research project, Timo Hener, was offered and accepted a position as tenured Associate Professor in Economics at Aarhus University, Denmark, during the project period. The EcUFam research project played a significant role in the academic career of all these young scholars by shaping their research profiles and pushing their research agendas, by expanding their national and international research networks and by allowing them to gather international research experience during several research visits.

With respect to the second, scientific objective, the research group achieved several scientific milestones in the period under review. Based on several administrative datasets with restricted access from Germany and Sweden, the group produced new research papers in the proposed three research modules “Fertility and Infant Health”, “Marriage and Divorce” and “Intergenerational Relations and Gender-Role Attitudes”. Not all of the originally proposed seven research papers were realized as intended due to time restrictions related to Natalia Danzer taking over the new position at the Freie Universität Berlin as well as due to particular data limitations that only became apparent during the realization of the project. Consequently, the research group worked partly on adapted and new related research projects, which deemed scientifically more promising, feasible and policy relevant. Overall, the research group generated 7 new original research papers during the period under review, which are either submitted to journals (under revision), or included in the Ph.D. theses and about to be published as working papers and submitted to journals in the spring of 2021. Moreover, during the period under review, the junior research group leader and members succeeded in publishing related research work – which was partly started prior to the onset of the funding period and finalized during the period under review – in highly-ranked international peer-reviewed journals (7 publications).

Other important milestones were the project specific workshops at the beginning (kick-off workshop) and in the middle of the project (international interim workshop), which fostered scientific exchange and networking of the project members located at the ifo Institute – Leibniz-Institute for Economic Research at the Leibniz Institute for Economic Research at the University of Munich – and international experts.

2. Activities and obstacles

Following the competitive hiring process of three new doctoral students, the research group started its work with a 2-day Kick-Off Meeting bringing together all members of the research team from the ifo Institute and the three external, international experts Arnaud Chevalier (Royal Holloway, University of London), Daniela del Boca (University of Torino), and Helena Holmlund (IFAU - The Institute for Evaluation of Labour Market and Education Policy). During this meeting, the participants presented ongoing research related to “Economic Uncertainty and the Family”, discussed planned research projects and the timeline for future meetings.

The project start was followed by an extensive period of data preparation. First, this involved comprehensive data collection, cleaning and harmonization necessary for building the regional panel data set for Germany’s local labour markets and local unemployment shocks (based on publicly available data sources). Second, this required getting access to anonymized confidential German administrative micro data sets (birth, marriage and divorce registry; micro-census; hospital diagnosis data) with restricted and controlled access as well as extensive data preparation of these large data sets (incl. approved merging of regional indicators to these administrative files). The data preparation and analysis required substantial time investments due to the large size of the data sets, remote access and the very long processing/computation times as well as due to the restricted and limited access to the data in secure data centres.

As soon as first results became available, these were presented and discussed internally at the ifo Institute as well as at national and international conferences and research seminars.

As regards the general course of the research project, it should be noted, that Natalia Danzer was on parental leave during the first year of the project (the project start was postponed by 6 months in accordance with regulations by the Leibniz Association) and was holding a part-time position until July 2018, when she left the ifo Institute to take up her professorship at the FU Berlin. During this time, the ifo Institute and, in particular, the ifo Center for Labor and Demographic Economics headed by Helmut Rainer, offered an extremely supportive environment helping her to reconcile her professional research activities and duties and her family responsibilities. Moreover, to account for her parental leave and the part-time work, the EcUFam project duration was extended in a cost-neutral way. In the period from August 2018 until the project end in 2020, Helmut Rainer became the project leader. Natalia Danzer remained involved in selected research projects and became affiliated with the ifo Institute/ifo Center for Labor and Demographic Economics as a Research Professor.

Further central activities were as follows:

International project workshop

In October 2017, we carried out a successful and intensive 2-day scientific workshop on the topic “Economic Uncertainty and the Family”. Out of the 24 participants, 18 participants were international experts from Austria, Italy, Spain, Sweden, Switzerland, the UK and the United States. The three keynotes were given by Christopher J. Ruhm (University of Virginia), David Dorn (University of Zurich) and Uwe Sunde (LMU München). During the workshop, the participants presented and discussed in detail and extensively 11 research papers by senior researchers and 5 research papers by doctoral students.

Research visits and international networks

International research visits formed an integral part in promoting the junior researchers international research experience and strengthening the international scientific network of the research group. Overall, the team members conducted six international research visits lasting between 1 week to 4 months at several distinguished European and American universities and research institutes, in particular, Aarhus University (Denmark); CES/LMU Munich (Germany); Universitat Pompeu Fabra, Barcelona (Spain); University of Chicago (United States); University of Pennsylvania (United States); and IFAU - The Institute for Evaluation of Labour Market and Education Policy University (Uppsala, Sweden). These research visits not only fostered the academic exchange with other experts, but also lay the groundwork for new research ideas, future cooperation and scientific collaborations.

Presentations at scientific events

To foster scientific exchange and networking and to present and discuss the project's research findings, the members of the research group actively contributed to and participated in national and international scientific events. In particular, the researchers of the group presented their work at 19 nationally and internationally renowned conferences, including, e.g., Annual Meeting of the American Economic Association, Annual Congress of the German Economic Association/Verein für Socialpolitik, Annual Conference of the European Association of Labor Economists, or the Spring Meeting of Young Economists. Moreover, the group members presented their research additionally at more than 20 seminars, workshops or summer schools during the period under review (22 events).

3. Results and successes

The EcUFam project allowed us to assess many research questions related to the importance of economic uncertainty, worries, and family-related policies for family and health outcomes. In the following, we summarize the key research results of the three project modules:

Module 1. Fertility and Infant Health. Our main research paper in this module is motivated by the widely accepted fetal origins hypothesis, according to which fetal and early-life conditions and health shocks are highly important for later life outcomes. Seminal studies for the US and other European countries assess the impact of economic downturns on the health of newborns and report a positive health impact of recessions. In contrast, we show evidence of negative health effects in the German context using new and more refined health measures. Based on hospital diagnosis and birth registry data for newborns, we find that local unemployment rates and economic uncertainty increase adverse health conditions that originate in the perinatal period (mainly during the third trimester of pregnancy). When exploring mechanisms, we cannot attribute the results to parental selection, in-utero selection, maternal hospital visits during pregnancy, hospital-capacity induced diagnoses, or environmental pollution. Instead, we observe an increase in maternal health problems during labor and delivery, potentially related to maternal stress and nutrition. Our results point towards additional health costs of economic downturns that have previously been over-looked (*Local Labour Markets and Health at Birth*, Danzer, N., T. Hener and P. Reich).

In a second paper, we focus on the relationship between marriage and birth timing and the incidence of childlessness. Combining a structural model with German administrative data, we find, among others, that institutions and economic conditions matter: the two major factors for childlessness in West Germany are postponement of childbirth and high opportunity costs of children due to lack of public childcare (*Childlessness and Inter-Temporal Fertility Choice*, F. Siuda; Ph.D. job market paper). The long-run health effects of the 1979 maternity leave expansion from 2 to 6 months in Germany are evaluated in a third, quasi-experimental study. Using German hospital diagnosis registry data for the years 1994 to 2014, we find that the maternity leave expansion significantly improved health outcomes of affected children (fewer hospital admissions, reduced likelihood of mental and behavioural disorders). This paper carries important policy implications for the international debate on the design and length of parental leave legislations (*Maternity Leave and Children's Health Outcomes in the Long-Term*, M. Fabel, conditionally accepted at the *Journal of Health Economics*).

A master thesis, which was carried out as part of the EcUFam project, analysed data from several waves of the German graduate survey to assess the economic and demographic consequences of graduating in a recession. The findings suggest a negative impact of graduating during times of higher regional unemployment on fertility outcomes of women and men (*Graduating in a Recession: Consequences for Labour Market and Family Outcomes*, C. Stork, Master thesis LMU Munich).

Module 2. Marriage and Divorce. In two papers, we studied the relationship between labor market uncertainty, the design of social security systems and the formation and dissolution of marriages. In the first paper, we propose a search model with transferable utility in which ex-

ante heterogeneous men and women simultaneously search for partners in the marriage market and switch between employment and unemployment in the labor market. Based on an estimation of a structural model using German micro data, we distinguish between so-called “labor market divorces” and “match-specific divorces” and show that the share of labor market divorces has increased significantly in Germany since the mid 2000s. This is mainly driven by couples in which highly-educated women switch from unemployment to employment. At the same time, the share of labor market divorces triggered by unemployment has decreased significantly (*Marriage and Divorce under Labor Market Uncertainty*, Holzner, C. and B. Schulz). The second paper studies the importance of the insurance motive for marriage and divorce by exploiting an exogenous increase in risk sharing (mutual insurance) within households in Germany. In January 2003, a labor market reform sharply reduced the means-testing exemptions in the unemployment insurance system and thereby increased the extent to which spouses have to insure each other against unemployment. However, the degree to which (potential) spouses were affected by this reform varies with nationality. Using a differences-in-differences identification strategy and data on all marriages and divorces in Germany between 1997 and 2013, we show that increased means testing made the formation of interethnic marriages significantly less attractive. At the same time, the reform increased the stability of newly formed interethnic marriages. As interethnic marriages can contribute to successful integration of migrants, the adverse effects of the labor market reform on marriages identified in this paper carry important policy insights (*Marriage and Divorce: The Role of Labor Market Institutions*. Schulz, B. and S. Siuda, CESifo WP).

Module 3. Intergenerational Relations and Gender-Role Attitudes. The main research paper in this module was carried out jointly with the Swedish EcUFam partner, Helena Holmlund. Exploiting a large Swedish administrative data set, we study the role of different cultural backgrounds for observed gender gaps in education among second-generation immigrant youth in Sweden. Based on within-family, cross-gender sibling comparisons, the results indicate that the central cultural dimension that matters for gender gaps in student achievement is the extent to which a society emphasizes ambition, competition, and achievement, which is strongly predictive of a relative achievement disadvantage of girls compared with boys (*All Geared Towards Success? Cultural Origins of Gender Gaps in Student Achievement*. Holmlund, H., H. Rainer and P. Reich).

3.1 List of working papers originating from the EcUFam research project (working papers, manuscripts under review or close to completion/submission; Ph.D. chapters)

- Schulz, B. and F. Siuda. “Marriage and Divorce: The Role of Labor Market Institutions”, (*CESifo Working Paper* No. 8508, August 2020; submitted to journal).
- Danzer, N., T. Hener and P. Reich. „Local Labour Markets and Health at Birth“ (manuscript, to be submitted to journal in spring 2021)
- Siuda, F. “Childlessness and Inter-Temporal Fertility Choice” (manuscript, to be submitted to journal in spring 2021)
- Holzner, C. and B. Schulz. “Marriage and Divorce under Labor Market Uncertainty” (manuscript, to be submitted to journal in spring 2021)
- Holmlund, H., H. Rainer and P. Reich. “All Geared Towards Success? Cultural Origins of Gender Gaps in Student Achievement” (Ph.D. thesis chapter and manuscript, to be submitted in spring 2021)
- Reich, P. “Out of the Dark, into the Light? The Impact of Seasonal Time Changes on Work-Related Accidents” (Ph.D. chapter; manuscript)
- Fabel, M. “Crime Externalities from Football Games in Germany” (Ph.D. chapter; manuscript, to be completed)

3.2 List of publications in peer reviewed journals of EcUFam project (incl. accepted, forthcoming articles) completed and published during the period of review, related to local (economic) uncertainty shocks, family-related policies and family/health outcomes.

- Auer, W. and N. Danzer (2016). „Fixed-Term Employment and Fertility: Evidence from German Micro Data.“ *CESifo Economic Studies*, Vol. 62 (4): 595-623.

- Danzer, A. and N. Danzer (2016). "The Long-Run Consequences of Chernobyl: Evidence on Subjective Well-Being, Mental Health and Welfare." *Journal of Public Economics*, Vol. 135: 47–60.
- Danzer, N., M. Halla, N. Schneeweis and M. Zweimüller (forthcoming). "Parental Leave, (In)Formal Childcare and Children's Long-Term Outcomes." *The Journal of Human Resources*.
- Danzer, N. (2019). "Job Satisfaction and Sorting into the Public and Private Sector: Evidence from a Natural Experiment." *Labour Economics*, Vol. 57: 46-62.
- Danzer, N. and V. Lavy (2018). "Paid Parental Leave and Children's Schooling Outcomes." *The Economic Journal*, 2018, Vol. 128 (608): 81-117.
- Fabel, M. (forthcoming). "Maternity Leave and Children's Health Outcomes in the Long-Term", conditionally accepted at the *Journal of Health Economics*.
- Siuda, F., and U. Sunde, (forthcoming) "Disease and Demographic Development: The Legacy of the Plague", *Journal of Economic Growth*.

3.3 Completed theses and dissertations

During the period under review, two of the four doctoral students involved in the research project successfully completed their Ph.D. thesis and continue their academic careers as Tenure-Track Assistant Professors at WU Vienna and Aarhus University. One Ph.D. candidate has submitted his thesis shortly after the end of the official project period; the defence is scheduled for January 2021. The fourth doctoral student, who started his Ph.D. thesis and participation in the research project at a later point in time, has completed two chapters during the period under review and is expected to finish his thesis in the first calendar quarter of 2021. As part of the project, a Master student of the LMU was supervised by Natalia Danzer and Helmut Rainer and studied a research question within the first module (Master thesis by C. Stork, "Graduating in a Recession: Consequences for Labour Market and Family Outcomes").

3.4 Acquisition of third-party funds

To follow-up on the new research ideas generated during the EcUFam project, Bastian Schulz successfully applied for the Aarhus University Research Foundation (AUFF) Starting Grant, which grants him about EUR 214,000 during the period between 12.06.2018 and 31.12.2022.

3.5 Transfer, public relations work and media coverage

We disseminated the findings and research results of the research group to the wider public in various formats. The insights of the project "Marriage and Divorce: The Role of Labor Market Institutions" were presented in a non-academic talk in front of parliamentarians during the event "Leibniz im Bundestag". Several of the research findings were also summarized and presented in a non-technical way in the "ifo Schnelldienst" (e.g., Auer, W. and N. Danzer, „Ökonomische Unsicherheit: Befristete Verträge erschweren Familiengründung“, *ifo Schnelldienst*, 2015, 68(18): 28-36; Danzer, A., N. Danzer and Anita Fichtl „Die psychischen Langzeitfolgen der Nuklearkatastrophe von Tschernobyl.“ *ifo Schnelldienst*, 2016, 69(07): 33-38). It is also planned to disseminate further research findings and policy insights via the *ifo Schnelldienst* after the (revised) manuscripts have been accepted for publication.

The research of the team members furthermore received attention from the international press and was covered in national and international newspapers (including articles based on interviews), e.g., Aamulehti (Finland), Daily Mail and the Guardian (UK), Neue Züricher Zeitung (Switzerland), Information Dänemark, Republic.ru (Russia), Deutsche Welle, TAZ, Stuttgarter Zeitung/Sonntag Aktuell, Donaukurier, Wirtschaftsblatt, 3Sat.

3.6 Further achievements

Further achievements by Natalia Danzer were the receipt of the "Prize for outstanding academic achievement awarded by the Society for the Promotion of Economic Research (Friends of the Ifo Institute) in 2017" and her nomination for the Future Leaders' Program at the Science and Technology in Society (STS) forum in Kyoto, Japan (30/9 – 3/10/2017).

4. Equal opportunities

Natalia Danzer was on parental leave and working part-time afterwards due to family reasons during the entire period under review. During this time, she benefited from the ifo Institute's supportive and family-friendly working environment— e.g., from flexible working arrangements, including home office and flexible working hours—which aim at helping parents to reconcile working and family duties and at fostering equal opportunities. Natalia Danzer was also admitted to and benefited from the Leibniz Mentoring Program.

5. Quality assurance

To assure the quality of the research process, the research output was presented and discussed at project specific workshops involving internal and external experts as well as at (inter)national scientific conferences. Research results were made available or are about to be made available to the international scientific community as discussion papers in international discussion paper series (e.g., CESifo Working Paper Series, IZA Discussion Paper Series). The data work with the administrative data required following strict documentation guidelines and rules. Moreover, the ifo Institute holds that its researchers must adhere to rules of good scientific conduct, which include honesty and transparency in carrying out and presenting research, and disclosure of conflicts of interest. The institute has appointed an ombudsman for scientific integrity, Prof. Heinrich Ursprung, who is independent of the board and ensures that these rules are followed. In implementing EcUFam, our group has also benefited from ifo's quality management system, certified according to DIN EN ISO 9001, which sets out an organization-wide approach to directing, coordinating and controlling large research projects.

6. Additional in-kind resources

Not applicable.

7. Structures and collaboration

The structure of the research project included specific collaboration agreements with three international experts, Arnaud Chevalier (Royal Holloway, University of London), Daniela del Boca (University of Torino), and Helena Holmlund (IFAU - The Institute for Evaluation of Labour Market and Education Policy). These researchers contributed to and accompanied the research project scientifically by: actively participating in the (1) internal kick-off workshop at the start of the project and the (2) international interims workshop, (3) by providing valuable feedback and discussing the research output, (4) by hosting a research visit from a project's doctoral student and (5) by collaborating on a joint paper as part of the project. They also became affiliated with the CESifo network by becoming CESifo Research Network Fellows.

Over the course of the project, the team members started or intensified further research collaborations with Edoardo Ciscato (KU Leuven), Alexander Danzer (KU Eichstätt-Ingolstadt), Piotr Denderski (University of Leicester), Hanno Förster (Boston College), Benjamin Friedrich (Northwestern University), Martin Halla (Johannes Kepler University Linz), Helena Holmlund (IFAU, Uppsala, Sweden), Christian Holzner (LMU Munich), Victor Lavy (University of Warwick), Tim Obermeier (IFS London), Ana Reynoso (University of Michigan), Nicole Schneeweis (Johannes Kepler University Linz), Andrew Shephard (University of Pennsylvania), Uwe Sunde (LMU Munich), and Martina Zweimüller (Johannes Kepler University Linz).

The academic placements of the former research group members additionally increased the network of research collaborators from the perspective of the ifo Center for Labor and Demographic Economics: in particular, Natalia Danzer (FU Berlin), Timo Hener (Aarhus University), Bastian Schulz (Aarhus University), Fabian Siuda (WU Vienna).

8. Outlook

In their contemporary work and wider research agenda, the previous EcUFam research team members build on the project's insights and the identified research gaps and address these in several related follow-up studies and activities. The current COVID-19 pandemic and its impact on economic stress and worries within households and families highlights the relevance for a better understanding of the impact of crises on families and family outcomes and on policies that might help mitigating potential negative spill-over effects from macroeconomic fluctuations. While our research project has generated new and important insights, many open questions remain.

Natalia Danzer has recently submitted a follow-up proposal for a joint research project with Polish partners from Warsaw, in which she plans to analyse in more detail the interplay between gender norms, economic uncertainty/psychic stress and intra-household decision making using survey as well as experimental data. She also intends to conduct a follow-up study on the effect of local unemployment shocks on short- to medium-run health outcomes over the life cycle using the German hospital diagnosis data.

Bastian Schulz uses the funding from the Aarhus University Starting Grant to follow-up on his EcUFam research on family formation and family stability. Currently, he is involved in four research projects with international partners. He assesses the effects of plant closures on remarriage and marital sorting; joint career-decisions of couples and their impact on specialisation within households; the marriage market impact of the Danish ART reform (which allowed single mothers in vitro fertilization); and the marriage market impact of a wealth tax reform in Denmark during the 1980s.

Together with Dan Anderberg and Fabian Siuda, Helmut Rainer recently proposed an alternative measure for temporal variation in domestic violence incidence based on internet search activity during the COVID-19 lockdowns in the UK (CESifo working paper). This research is exemplary for the general and contemporary need to learn more about economic uncertainty and psychic stress during times of crisis, how to measure it and how it affects further family outcomes, e.g. domestic violence. The EcUFam project has also led to joint follow-up projects and grant applications between the ifo Center for Labor and Demographic Economics and one of the international collaborating partners, Helena Holmlund (IFAU).