

2018

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ifo INSTITUTE

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The ifo Institute 2018

The Goals and Tasks of the ifo Institute

Information and Research: Since its foundation in January 1949 ifo has provided both information and research, hence its name ifo = *Information and Forschung* (research). Its legal form is that of a registered, non-profit association. As a member of the Leibniz Association, the ifo Institute – formally the Leibniz Institute for Economic Research at the University of Munich e.V. – is an institution that receives public funding from the federal and state governments pursuant to Article 91b of the German Constitution. A cooperation agreement links ifo closely with Ludwig Maximilian University of Munich (LMU), and in 2002 ifo was officially proclaimed an “Institute at the University of Munich”.

The ifo Institute is one of the leading economic research institutes in Europe. Through its five fields of action – research, the promotion of junior economists, policy advice, participation in public debates, and information/services – it helps maintain and increase sustainable economic prosperity and social participation under constantly changing conditions.

The ifo Institute works on economically and politically relevant issues at the highest scientific level and with an international reputation, developing research-based recommendations for action for government, business and society. Economic data and information collected systematically and over long time horizons provide impetus for political and public debates, which in turn generate new research tasks. In this way, ifo plays an important part in the development of appropriate economic policy decisions as a basis for innovation and social development.

The ifo Institute’s economic policy model is the social market economy, i.e. the combination of economic success with social balance as championed by Ludwig Erhard, who was one of ifo’s founders. The central topic of research at ifo is the importance of government action for maintaining and increasing economic prosperity, economic stability and social cohesion. Government action should promote the creation of wealth, support stability and sustainability of economic development, ensure social security, and ensure that as many people as possible are able to take advantage of the opportunities available to them in an open and free society.

The central topic of research at ifo is the *analysis of the role of government action in sustainably maintaining and increasing economic prosperity and social cohesion*. In

the context of this topic, the ifo Institute deals with the following five fields of research:

1. Economic growth and sustainability
2. Equal opportunities and integration
3. Public tasks, taxation and political economy
4. Digitalisation of the economy
5. European integration, globalisation and “third system competition”

The ifo Institute, CES at the LMU and CESifo GmbH pool their resources as the CESifo Group to form an internationally active research association. The aim is to enrich the public debate on the basis of excellent economic research, to support economic policy decision-making processes with high-quality policy advice, and to support the public with high-profile economic information, such as the ifo Business Climate Index. The ifo Institute cooperates closely with the LMU, especially in the promotion of young researchers and through the joint Economics and Business Data Center (EBDC). The department heads and the president occupy nine professorships at the LMU, making up part of the Faculty of Economics.

The CESifo Group focuses on the ifo Institute’s national, European and international scientific networking and on economic research at the LMU. At the heart of these activities is its research network, consisting of former guest researchers at CES and the ifo Institute. EconPol Europe – The European Network for Economic and Fiscal Policy Research is also of central importance for European networking. EconPol Europe is a unique network of policy-oriented university and non-university research institutes from various European countries that combine their expertise to build bridges between national and European economic policy debates and contribute to the further development of the European Union.

ifo’s eight research centers – for Public Finance and Political Economy, for Labour and Demographic Economics, The Economics of Education, for Industrial Organisation and New Technologies, for Energy, Climate and Resources, for International Economics, for International Institutional Comparisons and Migration Research, and for Macroeconomics and Surveys – cover research topics that are also highly relevant for policy advice. The ifo Dresden Branch, founded

**Recommendations
of action for
government, business
and society**

in 1993, works in areas that are of special interest to the Free State of Saxony, from which it receives its funding.

ifo's junior research staff benefit tremendously from network effects within the CESifo Group. ifo employs more than 40 doctoral students, most of whom participate in the Institute's graduate programme and are also members of the Munich Graduate School of Economics (MGSE) at the LMU. ifo's doctoral programme is particularly attractive thanks to the fact that it combines academic research with the Institute's practical policy orientation.

The economic research carried out at the ifo Institute is subject to the "Rules of good scientific practice" drafted by the German Research Foundation (DFG), as well as to the gender equality standards also established by the DFG. The ifo Institute is seeking to gradually address the ongoing under-representation of women among its researchers by placing a particular emphasis on supporting young female academics.

**Expert opinions on
current economic
policy issues**

Politics and the general public benefit from the close link between the ifo Institute and the LMU, as this link reinforces the Institute's academic performance and first-class research is the foundation for the policy work that the Institute sees as its core task. As part of its policy advice, ifo produces a large number of expert opinions on current economic policy issues on behalf of public and private clients. ifo was among the institutes to submit a successful bid for the joint economic forecast tender, issued for the first time at a European level in 2007; and bid successfully again in all subsequent tenders, most recently in 2018. In the context of international consultancy projects, the ifo Institute also makes its expertise available to the public sector institutions of other countries.

**ifo Business
Climate Index - an
internationally
recognised indicator**

In addition to its research and policy advice, the ifo Institute also provides the public with data, information and other services. This takes place primarily in connection with its project-related and regular surveys of national and international business. Every month, the ifo Business Climate Index, an internationally recognised indicator of economic development derived from the ifo Business Survey, is awaited with great anticipation by the media, investors, and business leaders. The Institute began publishing the results of its quarterly poll of international economic activity in 120 countries as

the *ifo World Economic Survey* (WES) in 2002. Since its launch in 1999, the Database for Institutional Comparisons in Europe (DICE), which currently contains around 3,800 tables, graphs and short reports, has grown significantly and enriched the range of services provided by the ifo Institute.

ifo also offers a broad range of information via the internet, available in German and English, and publishes several journals and book series. International publications are becoming increasingly important.

Every year the CESifo Group organises a number of international conferences at the ifo Institute, and has become the second largest economics research network worldwide with over 1,500 researchers in 43 countries. The CESifo Working Papers written by members of this research network again took top places among all economic research institutions in a worldwide comparison of downloads from the Social Science Research Network website.

ifo's work is characterised by its cooperation with universities and renowned researchers in Germany and abroad. Its cooperation with the LMU occupies a special place in ifo's work. ifo and the LMU jointly created the "Economics & Business Data Center" (EBDC), whose main task is to supply a continuously updated dataset of German companies to feed new areas of research in economics and business administration. The EBDC provides researchers with corporate data, a combination of ifo survey data and other corporate data sources, and is the main contact and coordinator for scientific datasets on companies. In December 2013, a Research Data Center branch of the Bavarian Federal Statistics Office was opened in the EBDC. Consequently, researchers can now access German federal statistics survey data on the EBDC premises.

The Institute aims to offer ifo scientists an ideal setup that is conducive to achieving top results in research and policy advice in line with international standards. To this end, it signed up to the "European Charter for Researchers" issued by the European Commission, which is linked to the "Code of Conduct for the Recruitment of Researchers".

Cooperation with other partners – in particular the Universities of Augsburg, Dresden, Konstanz, Münster, Passau and Regensburg – enriches the Institute's work. In

In addition, the ifo Institute conducts research in collaboration with a great number of economists in Germany and abroad. This has resulted in informal international research networks in the individual ifo departments and for the Institute as a whole, including CIRET (the Centre for International Research on Economic Tendency Surveys), the EENEE (European Expert Network of Educational Economists) and EUROCONSTRUCT.

The ifo Institute cooperates closely with external economists and other established experts to assure the quality of its research. This particularly applies to its 54 research professors and ten research affiliates, research associates and senior research associates (as of 31 December 2018) as well as to more than 45 guest professors from all over the world with whom ifo researchers collaborate annually on joint projects.

The Scientific Advisory Council and the User Advisory Council are especially important, as they not only advise the Institute on its strategic planning, but also evaluate its performance and help to ensure the scientific quality of its work. The ifo Institute owes special thanks to the external academics who are actively involved in the CESifo Group, as well as to the members of its advisory boards, which include the Administrative Council and the Board of Trustees.

Report of the Executive Board

The main focus of 2018 was on preparing for the evaluation of the ifo Institute by the Senate of the Leibniz Association in 2019. This gave major impetus to the **further development of the research agenda** and of all the ifo Institute's other fields of action. In the course of 2018, the ifo Institute reviewed the content of its research and intensively discussed its orientation for the coming years. This led to a reformulation of the Institute's central topic of research and to the identification of five fields of research for ifo in the coming years. The new central topic of research does not involve a fundamental reorientation of research, but rather builds on the Institute's existing strengths and takes up current economic and political developments in order to set new thematic priorities.

The central topic of research at ifo is the *analysis of the role of government action in sustainably maintaining and increasing economic prosperity and social cohesion*.

Focus on five fields of research

In the context of this topic, over the coming years the ifo Institute will focus its efforts on the following five fields of research:

1. Economic growth and sustainability
2. Equal opportunities and integration
3. Public tasks, taxation and political economy
4. Digitalisation of the economy
5. European integration, globalisation and "third system competition"

Networking between the ifo Centers and the interdisciplinary treatment of these topics will play a central role.

Outstanding year for publications in peer-reviewed journals

Further changes were made to ifo's **official bodies** with the departure of Prof. Jürgen Stark from the Board of Trustees and the Administrative Council. Prof. Stark had been a member of the Board of Trustees and Administrative Council of the ifo Institute since 1995. In June 1998 he was elected Vice-Chairman of the Board of Trustees and thus also of the Administrative Council. We owe Prof. Stark our sincere thanks and utmost appreciation for his extremely reliable and expert cooperation in ifo's official bodies over the past 23 years. His successor is Nina Hugendubel, who has been a member of both bodies since 2009. Dr. Carsten Pillath, General Director of the European Council in Brussels, was newly appointed to the Administrative Council and the Board of Trustees. There were also further changes in the Board of Trustees. Overviews of all the official bodies can be found at www.ifo.de/gremien.

In September, Prof. **Gabriel Felbermayr** – Director of the ifo Center for International Economics – accepted the appointment as President of the Institute for the World Economy (IfW) and the associated professorship for Economics at the University of Kiel. He will take up the position in Kiel from March 2019. The ifo Institute regrets the departure of Gabriel Felbermayr, but also sees this honourable appointment as a success for the ifo Institute. To succeed him, the ifo Institute together with Ludwig Maximilian University of Munich (LMU) has announced a professorship for economics that will be known as the Economics of Globalisation.

Below are the central developments of 2018 in research, the promotion of junior economists, policy advice and scientific service.

RESEARCH AND THE PROMOTION OF JUNIOR ECONOMISTS

Publications in international journals that are peer-reviewed with an external referee process are a central indicator of scientific achievement. The year 2018 was another outstanding year in terms of the output of ifo's research staff. A total of 60 papers submitted by ifo economists to internationally recognised refereed journals were accepted for publication; 22 of these articles were published in high-ranking category A+ to C journals. In addition, ifo staff presented their research results by delivering 246 papers at international conferences with a referee system.

Table 1:
Publications in Peer-Reviewed Journals from 2012 to 2018

	2012	2013	2014	2015	2016	2017	2018
Articles in peer-reviewed journals	68	63	57	56	58	74	60
of which in categories A+ to B; from 2017 A+ to C	31	32	22	28	22	29	22

The following researchers successfully published articles in top academic journals in the A+/A categories in 2018:

- Clemens Fuest, Andreas Peichl (with Sebastian Sieglloch), "Do Higher Corporate Taxes Reduce Wages? Micro Evidence from Germany", *American Economic Review* 108 (2), 393–418.
- Natalia Danzer (with Victor Lavy), "Paid Parental Leave and Children's Schooling Outcomes", *The Economic Journal* 128 (608), 81–117.

- Rahel Aichele (with Inga Heiland), “Where is the Value Added? Trade Liberalization and Production Networks”, *Journal of International Economics* 115, 130–144
- Marc Piopiunik, Simon Wiederhold (with Jan Bietenbeck), “Africa’s Skill Tragedy: Does Teachers’ Lack of Knowledge Lead to Low Student Performance?”, *Journal of Human Resources* 53 (3), 553–578.
- Ludger Wößmann (with Sascha O. Becker), “Social Cohesion, Religious Beliefs, and the Effect of Protestantism on Suicide”, *Review of Economics and Statistics* 100(3), 377–391.
- Jens Ruhose (with Tim Krieger, Laura Renner), “Long-Term Relatedness between Countries and International Migrant Selection”, *Journal of International Economics* 113, 35–54.
- Michele Battisti, Gabriel Felbermayr, Panu Poutvaara (with Giovanni Peri), “Immigration, Search, and Redistribution: A Quantitative Assessment of Native Welfare”, *Journal of the European Economic Association* 16 (4), 1137–1188.
- Gabriel Felbermayr (with Giammario Impullitti, Julien Prat), “Firm Dynamics and Residual Inequality in Open Economies”, *Journal of the European Economic Association* 16(5), 1476–1539.

Three books – “Developments in Global Sourcing”, “The Taxation of Pensions” and “The Economics of Philanthropy” – were published in 2018 in the **CESifo Seminar Series** published by MIT Press. In this series, the research results from joint projects of CESifo researchers and designated external scientists are published. The aim is to provide an overview of the level of research on a wide range of economic topics and thus contribute to the current policy debate.

The publication successes of ifo economists are also reflected in the scientific rankings of the RePEc network (RePEc – Research Papers in Economics). In the **RePEc ranking** of international scientific citations of institutions based in Germany, the Munich economists once again ranked highly at the end of 2018: ifo Institute (3), CESifo (5) and the LMU (6). At the top are the European Central Bank (based in Frankfurt am Main) and the network of the IZA – Institut für die Zukunft der Arbeit – (Bonn), which comprises well over a thousand researchers from all over the world.

Table 2:

Economic Research Institutes and Economics Faculties in the RePEc Ranking in December 2018

Ranking	Institution	Average Ranking
1	ECB, Frankfurt/Main	1.59
2	IZA, Bonn	1.76
3	ifo Institute, Munich	3.89
4	DIW, Berlin	4.32
5	CESifo, Munich	4.77
6	LMU, Munich	6.88
7	University of Frankfurt/Main	7.90
8	University of Mannheim	9.16
9	Deutsche Bundesbank	9.37
10	University of Bonn	10.40
11	ZEW, Mannheim	10.90
15	IfW, Kiel	16.94
24	RWI, Essen	29.18
29	IWH, Halle	33.40

ifo ranks highly among economic research institutes

Table 3:

Individual Researchers in the RePEc Ranking of December 2018 for Germany

Ranking	Person*	Institution	Average Ranking
1	Luc Laeven	ECB, Frankfurt/Main	2.47
2	Urs Fischbacher	University of Konstanz	4.91
3	Armin Falk	University of Bonn	5.51
4	<i>Hans-Werner Sinn</i>	<i>ifo Institute</i>	5.73
5	<i>Ludger Wößmann</i>	<i>ifo Institute</i>	6.54
6	Marcel Fratzscher	DIW, Berlin	8.1
7	Klaus M. Schmidt	LMU	11.6
8	Martin F. Hellwig	MPI, Bonn	11.72
9	Andrew J. Oswald	IZA, Bonn	12.13
10	Kai Konrad	Max Planck Institute for Tax Law and Public Finance	14.73
29	Clemens Fuest	ifo Institute	36.26
42	<i>Gabriel J. Felbermayr</i>	<i>ifo Institute</i>	47.36
47	<i>Andreas Peichl</i>	<i>ifo Institute</i>	54.79
55	<i>Niklas Potrafke</i>	<i>ifo Institute</i>	66.69
62	Reint E. Gropp	IWH, Halle	71.23
63	Christoph M. Schmidt	RWI, Essen	71.53
92	<i>Panu Poutvaara</i>	<i>ifo Institute</i>	103.81
93	<i>Oliver Falck</i>	<i>ifo Institute</i>	104.5
138	Dennis Snower	IfW, Kiel	144.52
223	<i>Helmut Rainer</i>	<i>ifo Institute</i>	229.27
266	Achim Wambach	ZEW, Mannheim	277.19
840	<i>Karen Pittel</i>	<i>ifo Institute</i>	853.7

* **Bold font:** Presidents of economic research institutes, *italic type:* Department heads at the ifo Institute (2018).

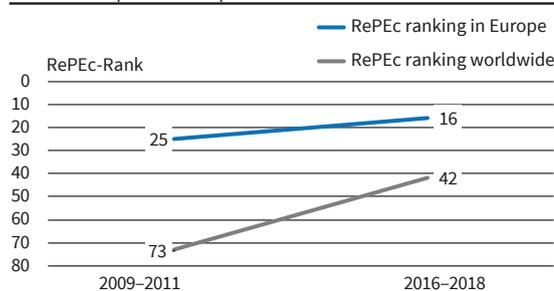
In the corresponding **RePEc ranking** of scientific citations by individual researchers, ifo researchers ranked highly. Hans-Werner Sinn is fourth among German economists, and Ludger Wößmann is fifth, while ifo President

Clemens Fuest is 29th. In addition, five other ifo department heads – Gabriel Felbermayr (42), Andreas Peichl (47), Niklas Potrafke (55), Panu Poutvaara (92) and Oliver Falck (93) – are placed among the top 100 economists in this ranking (see Table 3).

The ifo Institute's European and international position is also strong. This is demonstrated by the fact that in the RePEc ranking for the period 2016–2018 it ranked 16th in Europe and 42nd worldwide among all economic research institutions. Since the last evaluation period, ifo has significantly enhanced its international profile (see Figure 1). In Europe, its rank improved from 25 to 16, while worldwide it rose from 73 to 42. ifo economists are also prominently represented in the individual researcher rankings. For example, Hans-Werner Sinn is ranked 21st, Ludger Wößmann 53rd, and Clemens Fuest 248th in a European comparison.

Significantly enhanced international profile

ifo Rank in the RePEc Ranking
Median of respective time periods



Source: RePEc.

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Promoting junior economists

The ifo Institute's strong scientific achievements are also reflected in its success in the scientific competition for **research grants**. Research funding raised in scientific competition in 2018 has a double effect for the ifo Institute: On the one hand, it increases the scope for theoretical basic research; on the other hand, it enables fundamental policy-oriented issues to be addressed and thus improves the basis for policy advice provided by the ifo Institute. This is illustrated by the following two examples:

For some time now, there has been a public discussion in Germany surrounding the topics of social justice and inequality, in particular the development of income (in) equality. But this debate falls short of answering the question of social justice. The extent to which a society is fair is shown above all by the equal opportunities it offers

its members. The “**Multidimensional Equality of Opportunity**” project, funded by the German Research Foundation (DFG) and carried out by economists at the ifo Center for Macroeconomics and Surveys, is concerned with the development of suitable measures for multidimensional equal opportunities. In contrast to pure measures of inequality, the measurement of equal opportunities should take individual responsibility for the differences observed into account. It also recognises that well-being is a multidimensional concept that includes not only income but also health, education and political participation. If an equal opportunity society is to be created, appropriate measures must be provided to this end. The project will help develop appropriate measures.

In the project “**How Does Reducing the Intensity of Tracking Affect Student Achievement and Equity? Evidence from German State Reforms**”, funded by the German Research Foundation (DFG) as part of the Priority Programme 1646, economists at the ifo Center for the Economics of Education are investigating the effects of a reduction in the intensity of school tracking on student performance and equal opportunities in German school systems. To this end, the reforms carried out by some Länder are analysed on the basis of National Educational Panel Study data on the fifth- and ninth-grade cohorts. The study focuses on the impact on competency measures, tenth-grade attendance, school leaving qualifications and class repetitions.

In connection with research, the **promotion of junior economists** is a core task of the ifo Institute. As of 31 December 2018, the ifo Institute employed 50 doctoral students. A total of 11 doctoral students (including three from the Dresden Branch) completed their doctorates at ifo in 2018: Anna Sophia Ciesielski, Thomas Fackler, Carolin Fritzsche, Alexandra Heimisch, Natalie Obergruber, Christian Ochsner, Judith Saurer, Bastian Schulz, Lars Vandrei, Katharina Werner and Sebastian Wichert.

In February 2018, the ifo Institute hosted the 1st EconPol Europe CESifo Ph.D. Workshop on “Economic and Fiscal Policy in Europe”, organised for the EconPol network for young researchers described below. The workshop saw 30 doctoral students from institutions belonging to the EconPol network and a further 13 doctoral students from the ifo Institute participating, presenting and discussing their work on economic and financial policy at the European level.

The **Junior Development Program**, jointly developed by the ifo Institute and the LMU's Faculty of Economics, supports the individual professional development of young academics (postdoctoral level) and advises on all questions concerning the development of a career (national or international). The programme combines structured mentoring with a multi-level series of development workshops, seminars and networking activities. In addition, funds are available for research projects.

All postdocs at the ifo Institute can apply to become a member of the Junior Development Program. In December 2018, 22 ifo postdocs took part in the programme. The ifo Institute contributes to this programme both through mentoring and by organising workshops and seminars. In December 2018, the first workshop organised by ifo on the topic of "Communication with Interest Groups from Science and the Public" took place. It was a two-day workshop with external trainers. In addition, various fireside chats were organised on topics such as appointment procedures or the procurement of third-party funding, in which postdocs from the LMU and ifo were able to exchange ideas with ifo alumni and ifo professors.

ifo economists also help to promote junior economists by holding courses. In the year under review, ifo economists held 87 teaching positions and supervised 81 Bachelor's and Master's theses, 64 dissertations and 18 habilitations.

The Institute's scientific performance is also influenced by the intensive **involvement of external researchers**. In 2018, Gordon B. Dahl (University of California, San Diego), Natalia Danzer (Freie Universität Berlin), Georg Dürnecker (LMU), and Dominik Sachs (LMU) were recruited as new research professors, with the result that a total of 54 external economists were associated with the ifo Institute as research professors on 31 December 2018. In addition, ten research associates work together with the Institute.

A particularly important element of international networking is the promotion of overseas research stays for ifo economists, especially at top foreign universities. A total of 17 research stays took place at Harvard University, the University of Wellington, the National Bureau of Economic Research, Cambridge, MA, and the University of California, San Diego, among others.

Each year, the CESifo Group organises numerous **conferences, workshops and seminars** that ideally promote the exchange of ideas between economists and help to expand their networks. Particularly noteworthy are the Area Conferences and the CESifo Venice Summer Institute. In total, the CESifo Group organised 25 international economics conferences in the year under review, most of which were held in the conference rooms of the ifo Institute. The following five workshops were held at the CESifo Venice Summer Institute: "Country Clubs", "Globalisation and Populism – Past and Present", "International Tax Reform – Challenges for Trade Integration and Implications for International Tax Coordination", "Evidence-Based Policy Advice: How it is Produced and Used" and "Expectation Formation". These conferences and workshops primarily serve scientific exchange between the members of the CESifo Research Network, but at the same time they offer ifo economists the opportunity to establish contacts and discuss their academic work with the members of the CESifo Research Network. By the end of 2018, the network had grown to 1,546 members from 43 countries.

Two important events in 2018 were the conference in honour of the 75th birthday of Eric A. Hanushek, which took place immediately before the CESifo Area Conference on Economics of Education and brought the world's most renowned educational economists to Munich, and the scientific symposium "The Federal Republic of Germany after 70 Years: Chiemsee Dialogue between Science and Business" on the occasion of the 70th birthday of Hans Werner Sinn. The Chiemsee Conference focused on the challenges facing Germany ten years on from the euro crisis. Among the issues discussed were the dangers for Germany's economic future, how to assess the ongoing current account surplus, and what regulatory framework Europe needs.

Several **prizes** were awarded at the 69th Annual Meeting of the ifo Institute. The Society for the Promotion of Economic Research (Friends of the ifo Institute) awarded the prize for outstanding scientific achievements in the field of empirical economic research to Felix Rösel, research associate at the ifo Dresden Branch, for his highly successful research work, which led to five publications in international peer-reviewed journals in 2017, including the *European Journal of Political Economy* and *Fiscal Studies*. The annual prize for outstanding achievement in managing third-party research pro-

CESifo researcher network:
1,546 members from
43 countries

Prizes for outstanding scientific achievements

Driving the policy debate through press releases, interviews, press articles and public events

jects went to the project team comprising Prof. Ludger Wößmann (Director of the ifo Center for the Economics of Education), Elisabeth Grewenig, Dr. Sarah Kersten, Franziska Kugler, Philipp Lergetporer, Laura Oestreich, Lisa Simon and Katharina Werner (researchers at the ifo Center for the Economics of Education) for their successful work on the project “The Political Economy of Educational Policy: Insights from a Public Opinion Survey”, which was funded by the Leibniz Association as part of the Leibniz Competition.

Clemens Fuest, president of the ifo Institute, has also been president of the International Institute of Public Finance (IIPF), the world organisation of public finance economists, since 24 August 2018. The IIPF’s approximately 800 members had elected him to the post handover in 2017 for the term of office until August 2021; the handover took place at the 2017 Annual Meeting in Tokyo. Fuest succeeds Joel Slemrod, of the University of Michigan.

On 11 September 2018, Clemens Fuest was awarded the “Impulsrede zur Sozialen Marktwirtschaft” prize by the Wirtschaftspolitischer Club Deutschland e.V. in Berlin. The speech in his honour was held by Oliver Wittke, Parliamentary State Secretary at the German Federal Ministry for Economic Affairs and Energy.

Karen Pittel, Director of the ifo Center for Energy, Climate and Resources and Professor of Economics, in particular Energy, Climate and Exhaustible Natural Resources at the LMU, has taken over the chair of the Committee for Environmental and Resource Economics of the Verein für Socialpolitik (German Economic Association).

Prof. Dr. h.c. Roland Berger, management consultant, founder of the Roland Berger Foundation and Chairman of the Executive Board of the Friends of the ifo Institute, was appointed an honorary member of the Society for the Promotion of Economic Research (Friends of the ifo Institute) e.V. at the society’s General Meeting. Since his election as Chairman of the Executive Board of the Friends of the ifo Institute in 2007, Prof. Berger has done a great deal to expand the society’s activities. It is thanks to his personal commitment that the society has succeeded in getting numerous companies and leading figures from the business world to become members and/or cooperate with the society.

CONTRIBUTIONS TO POLICY ADVICE AND THE POLICY DEBATE

The ifo Institute is a think tank for economic policy and uses its research expertise and data to actively participate in the public debate on the best economic policy ideas and concepts. It aims to communicate its theoretical and empirical findings in economics to policy-makers and in turn, derives its research topics from the policy debate. In 2018, the ifo Institute was once again heavily involved in policy advice and the policy debate.

It pursued this goal both via the periodicals of the ifo Institute as well as through an abundance of press releases, interviews, press articles and public events. Among them were the **ifo Viewpoints** – brief commentaries on topical issues by Clemens Fuest. These addressed the following topics in 2018: “Three-Step Plan for a Better European Monetary Fund”, “Hundred Year High Inequality in Germany? – A Fairy Tale Based on Selective Perception”, “Is the Grand Coalition Leading Germany towards a Transfer Union? The Euro Junktim”, “Why We Need to React to Trump”, “Germany Should Adopt an Area-Based Property Tax”, “Italy’s New Government: Transfer Union or Euro Exit”, “Trade Disputes: Why Trump’s Position Is Much Weaker against EU than China”, “Tariffs on Cars”, “Tragedies Like Greece Must Not Be Repeated” and “The Third Type of Inter-System Competition: Europe and the Rise of China”.

The **European Economic Advisory Group at CESifo (EEAG)**, a CESifo-backed council of economic experts on the assessment of economic developments in Europe, published an annual report in February 2018 entitled “What Now, With Whom, Where To – The Future of the EU”, which considers the challenges to integration in Europe in the face of the euro crisis, Brexit, general geopolitical trends and divergences between EU member states. Deeper integration within the European Union has largely come to a standstill – not least because of the UK’s decision to withdraw from the EU. The report therefore focuses on a detailed analysis of the current obstacles to greater integration and identifies ways out of the crisis. This includes, for example, the possibility that member states, depending on their convictions and willingness to integrate, would take part in only some EU initiatives, thereby creating a “two-speed Europe”.

The articles published in the **periodicals** of the ifo Institute regularly find their way into the public debate. In the year under review, the publication programme

comprised 24 issues of *ifo Schnelldienst*, which celebrated its 70th anniversary in 2018, twelve issues of *ifo Konjunkturperspektiven*, six issues of *ifo Dresden berichtet* and four issues each of *CESifo Forum*, the *ifo DICE Report* and the *ifo World Economic Survey*. Five *ifo research reports*, three *ifo Dresden studies* and three *ifo contributions to economic research* were published as monographs, and 39 issues were published in the *ifo Working Papers* series. The ifo Institute also issues the quarterly scientific journal *CESifo Economic Studies*, published by Oxford University Press. In addition, 600 issues have appeared in the series of *CESifo Working Papers* supervised by CESifo. This series is where essays by members of the CESifo Research Network are published. What is more, 13 issues of the newly published series of *EconPol Working Papers* and five issues of *EconPol Policy Reports* have been published. See below for details on the new publication series under the EconPol logo.

In 2018, events organised by the ifo Institute continued to mark high points in the economic policy debate. Of particular note were the **symposium** on 6 March 2018 jointly organised with the Bayerischer Handwerkstag under the title “**Bubbling Revenues, Big Challenges – Expectations of a Sustainable Tax and Financial Policy**”, the discussion round “**Self- and Reinsurance against Labour Market Shocks: A New Proposal for the Eurozone**”, organised by the ifo Institute together with SPD MEP Jakob von Weizsäcker on 12 June 2018, and the ifo Annual Meeting. The ifo Annual Meeting – which, as in previous years, was held in cooperation with the LMU in the Great Hall of the LMU – was dedicated to the topic “Digitalisation and Innovation and their Significance for Growth and Competitiveness”. More information is available in the “Press, Publications, Conferences” chapter.

The 14 “**Munich Seminars**” organised by CESifo together with *Süddeutsche Zeitung*, in which renowned speakers from business, science and politics talked about current economic topics, were very well received. Hans-Werner Sinn’s Christmas lecture on “The Impact of Brexit on Germany and Europe” also took place as part of the Munich Seminars.

In March and October 2018, two further “**Parliamentary Breakfasts**” were held at the Bavarian Representation in Berlin. Together with parliamentarians, Clemens Fuest discussed the need for economic, financial and European policy action and addressed current challenges.

The “**ifo Branchen-Dialog**” (ifo Industry Colloquium), a series of conferences organised in cooperation with the Chamber of Industry and Commerce for Munich and Upper Bavaria to analyse current economic developments, was also continued in 2018. More information is available in the chapter on the ifo Center for Industrial Organisation and New Technologies.

On the occasion of the 25th anniversary of the Dresden Branch, a **scientific conference on “Disparities: Challenges for Economic and Social Policy”** took place on **19 September 2018** in the Dreikönigskirche in Dresden. It highlighted the significant differences between eastern and western Germany, which persist almost 30 years after the fall of the Berlin Wall, in terms of economic strength, wages, private household wealth and many other dimensions. Prof. Marcel Thum, Director of the ifo Dresden Branch, opened the event. Dr. Matthias Haß, Saxon Minister of State for Finance, stressed in his welcoming address the importance of the ifo Dresden Branch for economic policy advice in the Free State of Saxony. (See also chapter on the ifo Dresden Branch).

On 4 and 5 July 2018, after a two-year break, the **Munich Economic Summit** took place under the title “Reshaping Europe” and under the patronage of Bavarian Prime Minister Markus Söder. The topics covered in this high-calibre conference were redefined in order to work even more intensively for cohesion in Europe and for the continent’s future. The aim of the conference is to bring together high-ranking government representatives, outstanding international economists and decision-makers from business, media and society to discuss important European policy issues face-to-face and with high international visibility. The Summit was also open to ifo’s junior economists. The topics covered at the Summit were manifold: Europe’s role and competitiveness in a new world order; the impact of Brexit; migration and digitalisation; the stability of the financial sector; populist and authoritarian tendencies; and European Economic and Monetary Union. The conference’s 25 speakers, among them Sigmar Gabriel, Günther Oettinger, Thimoteus Höttges and Anne Laure Delatte, exchanged their approaches and reform ideas with each other and with the audience in five keynote speeches and four panel discussions. A detailed report on the conference can be found in the “Press, Publications, Conferences” chapter.

ifo events are high points in the economic debate

Parliamentary Breakfasts in Berlin

Addressing the urgent financial and economic policy issues of European integration

In addition to initiating its own contributions to the policy debate, the ifo Institute also provided policy advice in the form of numerous **commissioned reports**. These projects are documented in the appropriate sections of this annual report. Selected examples of commissioned reports laying the foundations for policy advice in 2018 are given here:

- Framework agreement on conducting economics studies (Chamber of Industry and Commerce for Munich and Upper Bavaria). Some of the projects that came under this framework contract were:
 - Incentives for the elderly to remain in the labour force,
 - Incentives for an increase in female employment,
 - Brexit and its economic consequences for the German state of Bavaria and Upper Bavaria,
 - Introduction of a tax incentive for research and development – an assessment for Upper Bavaria,
 - Development of a steering mechanism for potential-orientated migration of qualified professionals.
- Regional analysis of the economic impact of Brexit on the German federal state of Hesse (Chamber of Industry and Commerce Frankfurt am Main),
- Effects of EU customs measures on the German economy (Federal Ministry for Economic Affairs and Energy),
- Practical experience with the exemption provisions Sec. 2a – 2c VermAnlG of the Small Investor Protection Act since 1 June 2016 (Federal Ministry of Finance),
- Economic benefits of the free movement of goods (European Parliament),
- Public staffing through 2030 in the Free State of Saxony until 2030 and competition with the private sector (Saxon State Ministry of Finance),
- Report on reviewing the weighting of inhabitants in the system of the municipal fiscal equalization scheme in North Rhine-Westphalia (Ministry of Home Affairs, Municipalities, Construction and Equal Treatment of the State of North Rhine-Westphalia),
- The German property tax: A public finance analysis and reform options (Haus & Grund Deutschland; ZIA Zentraler Immobilien Ausschuss e.V.),
- Convergence in EMU: What and how? (European Parliament).

The network **EconPol Europe – European Network for Economic and Fiscal Policy Research Europe**, founded in 2017 on behalf of the German Federal Ministry of Finance, is dedicated to the urgent financial and economic policy issues of European integration on an interdisciplinary basis. The network's mission is to step up the use of current research findings for the further development of European Economic and Monetary Union through well-founded contributions. EconPol Europe concentrates on four topics that the network believes are currently of particular relevance to Europe: sustainable growth and best practice; reform of EU policies and the EU budget; capital markets and financial sector regulation; and governance and macroeconomic policies in the European Monetary Union. Under the leadership of the ifo Institute, EconPol expanded its activities in 2018. Events that deserve special mention include the first EconPol Europe CESifo Ph.D. Workshop, the EconPol Lab at the CEPSlab18 event in Brussels, the EconPol Panel at the Munich Economic Summit, and a new parliamentary breakfast and lunch debate with MEPs in Brussels. The network also gained five new members in 2018, including the KOF Konjunkturforschungsstelle in Zurich and the Center for Economic Research and Graduate Education (CERGE-EI) in Prague. Further information can be found in the chapter on the Center for Macroeconomics and Surveys, which is in charge of the EconPol network.

Table 4:
Placements of ifo Scientists in the FAZ Overall Ranking for 2018

Ranking	Name	Points
2	Clemens Fuest	511
4	Hans-Werner Sinn	295
7	Gabriel Felbermayr	135
15	Ludger Wößmann	102
35	Niklas Potrafke	50
37	Andreas Peichl	49
52	Timo Wollmershäuser	35
73	Klaus Wohlrabe	22
94	Joachim Ragnitz	14

Media coverage is an important indicator of the relevance of academic papers for politics and society. According to Media Tenor, in the year under review the ifo Institute was again the economic research institute most frequently mentioned in the German media. Ac-

According to an analysis by Media Tenor, the ifo Institute is also one of the economic research institutes most frequently cited in the media at the European level.

The excellent results achieved by ifo economists in research and in the public policy debate also led to an excellent result in the 2018 **FAZ ranking** of the most influential economists working at universities or research institutes: as Table 4 shows, in addition to ifo President Clemens Fuest in second place, the FAZ ranking features a number of other highly rated ifo scientists.

SCIENTIFIC SERVICES

The ifo Institute offers a wide range of services to all groups in society interested in economic issues. The services include the collection, preparation and delivery of economic data and information, the compilation of materials for international institutional comparison and the collection and preparation of additional macroeconomic data. In 2018 the range of services was extended to include the following:

A survey to produce the **ifo Education Barometer** was carried out for the fifth successive year. In the year under review, particular emphasis was placed on gender issues, gender inequality and education policies for gender equality. A second part of the survey dealt with the opinions of young people on various education policy issues and compared them with those of adults. The survey showed that a clear majority of young people, as well as adults, are in favour of including #MeToo issues in school curricula. In addition, 82% of young people and 86% of adults welcomed the treatment of equality between men and women in the classroom. Looking at general education issues, there were similarities and differences between the opinions of young people and adults. For example, 60% of adults are in favour of introducing an all-day school system through to 3 p.m. in Germany, whereas 64% of young people are against it.

The 2018 event in “ifo Hands-On High-Quality Journalism Days” series launched in 2015 had to be postponed to January 2019 for scheduling reasons. Fifteen students from the German School of Journalism and six editors from Bayerischer Rundfunk attended the event on this new date. More information is available in the “Press, Publications, Conferences” chapter.

The ifo Institute also strives to invest in teacher training and further education. To this end, the “**ifo Hands-On Modern Economics Teaching Days**” training series was launched in 2017 and continued in 2018. It is recognised by the Akademie für Lehrerfortbildung und Personalführung (ALP), the Dillingen Academy for Teacher Training and Personnel Management, as an official further training course and is aimed at teachers from Bavaria who teach business studies at general and vocational schools. In 2019, the Center for Economics Education in Siegen will provide additional support for teaching the contents of this advanced training course, which is conducted in cooperation with the Association of Bavarian Business Philologists. Another event takes place annually in cooperation with the ALP in Dillingen. Since 2018, a cooperation agreement has stipulated that the ifo Institute will provide the speakers and the ALP the premises and organisation for this joint event. Entitled “Current Research Issues in Economics”, the advanced training course has been designed for use in grammar schools or in vocational schools.

Work on building up a **family business database**, which was started in 2017 on behalf of the Foundation for Family Businesses, was continued in 2018. The aim is to develop this database into Germany’s leading, internationally renowned data source for scientific research relating to the activities of family companies. As part of this project, the ifo Institute produces the “Annual Monitor of the Foundation for Family Businesses” every year. This sees a representative selection of companies interviewed on current and relevant issues, enabling the analysis of the economic developments of family companies. In 2018, around 1,300 family and non-family companies from Germany were surveyed on international tax competition from a business perspective. The chapter on the ifo Center for Macroeconomics and Surveys, which is responsible for the database, contains details.

DEVELOPMENT OF THE IFO INSTITUTE AS AN ORGANISATION

Preparations are underway for the 70th anniversary of the ifo Institute in 2019. ifo Schnelldienst 13/2018 published an article by the former ifo Executive Board member Prof. Meinhard Knoche on the founding history of the Institute and its close connection to Ludwig Erhard. Further reports on the historical development of the ifo Institute will be published in 2019.

Investing in
teacher training
for general and
vocational schools

Collecting, preparing
and delivering
economic data to
society

On 1 February 2018, the ifo Center for Energy, Climate and Exhaustible Resources was renamed the **ifo Center for Energy, Climate and Resources**. The new name reflects an expansion of the department's focus areas and shows that renewable resources will play a stronger role in climate and energy policy.

In January 2019, the central department of "Press, Publications, Conferences" was renamed "**Communications**" and Dr. Cornelia Geißler was entrusted with its management. In this newly created position, she will help to enhance the "ifo" brand with an integrated communication concept.

Work on the project mentioned in previous years, "The Development, Implementation and Professionalisation of **Knowledge-Transfer Concepts** in Non-University Economic Research", funded by the German Federal Ministry of Education and Research, continued in the year under review. In the course of the information services analysis that began in 2016, optimisation potential has been identified. In 2018, the focus of the work was on establishing internal knowledge-transfer processes and on evaluating the needs of different social groups, especially teachers, as well as on the further development of transfer services. As a result, the ifo Institute has geared its broad range of transfer activities to the information needs of the target groups. This has increased the efficiency of the current ifo knowledge-transfer system and opened up new potential for knowledge transfer. More information on the knowledge-transfer project is available in the "Press, Publications, Conferences" chapter.

The protection of personal data is very important to the ifo Institute. We have adapted our data protection provisions to the legal provisions of the **EU General Data Protection Regulation** ("EU-GDPR") in force since 25 May 2018 and published them on our website, together with the name and contact details of our external data protection officer, a role that was established in 2018.

In 2018, the **LMU-ifo Economics & Business Data Center (EBDC)** team, which has recently been strengthened with new members, continued to work on establishing new strategic research partnerships and strengthening existing ones. Having stepped up its efforts to this end last year, the team can now report initial successes in terms of content. These are set out in the chapter "Industrial Organisation and New Technologies" on the EBDC within this annual report.

CESifo GmbH also developed positively in the year under review. Founded in 1999, CESifo GmbH (full name: Munich Society for the Promotion of Economics – CESifo GmbH) serves to connect the LMU's Faculty of Economics and the ifo Institute with the international research community. CESifo GmbH supports the international CESifo Research Network, which continued to grow in 2018 and had 1,546 members by the end of the year. The members of the CESifo Research Network are divided into a total of nine research areas, which are led by internationally renowned academics, or Area Directors. A separate chapter in this annual report is devoted to the activities of CESifo GmbH.

In creating ideal conditions for top research, the **further qualification of researchers** is important. This topic and its development has already been covered in connection with research. The numerous research stays at top American universities in 2018 were particularly pleasing. Other highlights included ifo researchers again being invited to present papers at international, refereed conferences (246), and numerous ifo doctoral students expanding their expertise at summer schools. In addition, ifo doctoral students are given the opportunity to attend accompanying training courses. ifo's non-academic staff is also offered ongoing training: overall, 188 further training measures were approved in 2018, of which 125 were also conducted in that year.

The orientation of the entire organisation of the ifo Institute towards excellent performance in all areas of work is the objective of the **ifo management system** certified according to DIN ISO 9001, the functionality of which is checked annually by external auditors. A two-day recertification audit was carried out in February 2018, for which the ifo management system again received very good marks. Implementation of all projects is supported and tracked by the tools provided. A special feature of the certified quality management system is that it includes the ifo Institute's **gender equality policy** and the rules of this policy. Compliance with these rules was examined and confirmed in all external audits. In the year under review, efforts to shape working conditions at the ifo Institute with a view to achieving a more balanced gender structure among academic staff paid off. While the share of female doctoral students as of 31 December 2018 fell to 48% (51.9% if those doctoral students who were on parental leave as of that date are included), a balanced gender ratio among doctoral students has almost been reached.

Knowledge transfer geared to the needs of the target groups

ISO 9001 certified quality management system

Personnel capacity reduced compared to the previous year. As of 31 December 2018, the number of staff at the Institute fell by eight to 212. The number of scientific staff employed in the research departments (researchers, doctoral students and specialists) fell by seven: the number of researchers remained constant and the number of doctoral students fell by eight, while the number of specialists increased by one. The number of non-scientific staff decreased by one person. Details are presented in the section on Personnel Development.

Developments in **finances** in the year under review are presented in detail in the “Financial Development” chapter. The financial situation of the ifo Institute remains solid. The Institute’s financial statement for 2018 shows a surplus of 126,000 euros. This was channelled into reserves, increasing the Institute’s assets to a total of 2.499 million euros as of 31 December 2018.

In 2018, the ifo Institute received public funds totalling 10.756 million euros as part of joint research funding based on Art. 91b Basic Law (German constitution). Of this amount, 10.441 million euros was used for current operations and 315,000 euros was used for investment. A cash balance of 850,000 euros, which was accumulated in 2017 and carried over into 2018, also remained at the disposal of the ifo Institute. This cash balance was spent in the first quarter of 2018. The ifo Institute therefore had a total of 11.606 million euros at its disposal in 2018 from joint research funding and the balance figure related to the use and appropriation of a cash balance.

Finally, we would like to extend our thanks to all of the ifo Institute’s staff. It is due to their high levels of expertise and extraordinary commitment that the ifo Institute can look back on 2018 as being a very good year.

Munich, April 2019

The Executive Board



Prof. Dr. Dr. h.c. Clemens Fuest (President)



Dr. Stephanie Dittmer

Research and Service Departments

ifo Center for Public Finance and Political Economy

The research activities of the ifo Center for Public Finance and Political Economy focus on fiscal policy, the development of public budgets under conditions of high mobility at national and local levels and political economy. Its research includes model-based and empirical analyses, including an examination of international experiences. More specifically, the department's activities focus on public debt in Germany and Europe, the assessment of fiscal and taxation policy, fiscal federalism and local finances. There is a special focus on the motives behind policy decision-makers' actions from a public choice and political economics viewpoint.

The Center was active in examining issues in regional economics. An encompassing project in 2018 dealt with the shortage of land, land use and land development on behalf of the Chamber of Commerce and Industry for Munich and Upper Bavaria. The shortage of land has become an important issue in Munich and Upper Bavaria. The Center has also analysed the regional economic impact of Memmingen airport on tourism and other economic outcomes as well as the fiscal equalisation scheme in North-Rhine Westphalia.

Another of the Center's projects dealt with budget composition in Germany (federal, state and local level). The Center also compared budget composition in Germany with budget composition in other OECD countries by using the data on Classification of Functions of Government (COFOG). The study was descriptive. Its results showed, for example, that social expenditure in Germany (as a share of overall government expenditure) was higher and investments were lower than in other OECD countries. Surprisingly, this was also the case when compared to Scandinavian and the Benelux countries too.

The Center conducts the bi-monthly ifo and *Frankfurter Allgemeine Zeitung* (FAZ) Economists Panel, which surveys a representative group of economics professors at German universities on current economic policy issues. The panel's aim is to offer the public a differentiated perspective on economists' views on key challenges facing Germany.

The Center investigates how political institutions influence economic performance. A new measure for political institutions based on machine learning techniques has been developed.

In addition to these topics the Center's work also explores the implications of globalisation. Two projects in 2018 examined the effects of globalisation on income inequality and social expenditure. The Center also collaborated on the new KOF Globalisation Index that distinguishes between de facto and de jure globalisation as well as considering financial globalisation too.

Effects of
globalisation

Projects Completed in 2018

The Regional Economic Implications of Memmingen Airport

The Regional Airport of Memmingen was opened on the former military air base of Memmingerberg, which was closed down in 2003. Scheduled air services did not resume until 2007. To mark the tenth anniversary of the opening of the commercial airport in the Allgäu, this study, commissioned by the Bavarian Ministry for Economic Affairs, Regional Development and Energy, analyses the regional economic impact of Memmingen airport.

Economic impact of
an airport

The study is divided into three parts: the main study analyses the regional economic effect of incoming passengers arriving at Memmingen airport on regional tourism in Bavaria. Short studies, conducted as supplements to the main study and partly based on business surveys, analyse the airport's influence on the regional quality of the location, as well as the operating and economic activities of regional companies on the one hand; and the implications of conversion duration and the type of subsequent use of the Memmingerberg air base compared to the subsequent use of other closed, former military facilities on the other.

Regional Economic Impact of Memmingen Airport on Tourism

F. Dorn, L. Dörr, S. Gäbler, M. Krause, M. Mosler, H. Penzkofer, N. Potrafke in cooperation with the Mittelstands-Institut an der Hochschule Kempten for the Bavarian Ministry for Economic Affairs, Regional Development and Energy, February 2018 to December 2018.

Since 2007 it has been easier to access a number of tourism regions in Bavaria faster or more cheaply. To mark the tenth anniversary of Memmingen airport, this study explores the airport's regional economic impact on the regional tourism sector in Bavaria through

**Flight passengers
increase value
creation**

incoming passengers. It describes the development of Memmingen airport and the tourism sector in the selected Bavarian target regions of the Allgäu, Bavarian Swabia, Ammersee/Lech, the Starnberg Five Lakes Country, the Pfaffenwinkel, the Zugspitz region and Munich. A passenger survey shows different types of incoming passengers and the reasons for their travel. It also provides insights into how much additional value creation and how many jobs directly and indirectly flow into the selected target regions through guests arriving via Memmingen airport. The study evaluates the causal effects of the airport on regional developments in tourism; and discusses how the regional airport's value creation potential could be more efficiently tapped for tourism.

Memmingen Airport and the Study's Target Tourism Regions

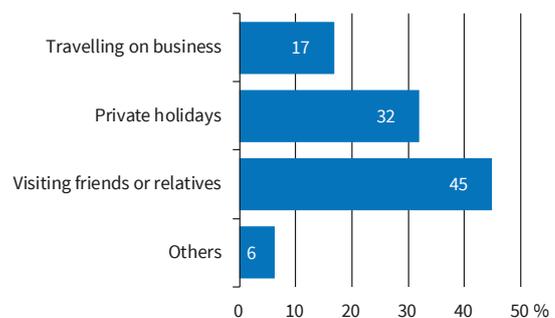


Note: FMM: Memmingen airport, MUC: Munich airport, NUE: Nuremberg airport.
Source: ifo Institute. © ifo Institute

The Memmingen commercial airport has seen a positive and sustainable development in passengers. While the airport had over 800,000 passengers back in 2009, this number rose to 1.17 million by 2017, a decade after its opening. The tourism sector in Bavaria has been growing steadily for many years. A look at the past decade since the opening of the commercial airport at Memmingen shows that arrivals and turnover in the hotel and catering industry in Munich and the Allgäu have risen at higher rates than the average levels for Bavaria.

The passenger survey conducted at Memmingen airport between March and August 2018 shows that an average of 40% of passengers at Memmingen airport were *incoming* passengers (i. a. arriving guests). Projections show that around 294,700 *incoming* passengers are expected at Memmingen airport in 2018. Around two thirds of overnight stays by incoming passengers are made in Bavaria. Munich and the Allgäu account for the largest shares of these passengers. Almost a third of all overnight stays by incoming guests via Memmingen airport happen in Bavaria's state capital of Munich, while around 21% take place in the tourism region of the Allgäu (Bavaria). When polled on the motive for their travel, almost a third of incoming guests responded that this was for private holidays. 45% of survey participants stated having visited friends or relatives, while 17% were travelling on business. Business people and holidaymakers spent 195 euros and 178 euros per day respectively. This was significantly more than travellers visiting friends/family, who spent just EUR 93 per day on average.

Reason for Travel

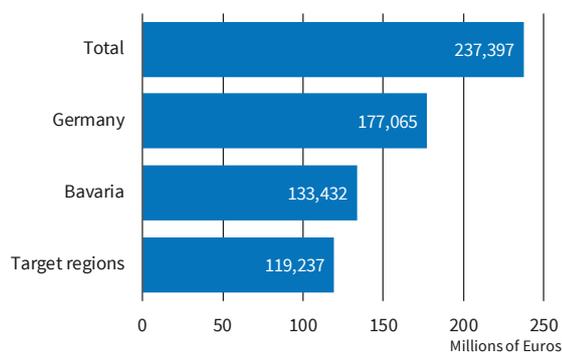


N = 964
Source: Passenger survey at Memmingen airport 2018; Calculations by Mittelstands-Institut Kempten. © ifo Institute

Based on conservative statistical projections, the expenditure and purchasing power effects of travellers arriving via Memmingen airport were calculated for 2018. Incoming travellers spent a projected total of around 237.4 million euros in 2018. Of this sum, 133.4 million euros were spent in the Free State of Bavaria and 119.2 million euros in the target regions of the Allgäu, Bavarian Swabia, Ammersee/Lech, Starnberg Five Lakes Country, the Pfaffenwinkel, Zugspitz region and Munich. Each additional euro in expenditure by an incoming traveller triggers purchasing power inflows of around 1.43 euros in the target regions. Overall, ex-

penditure by incoming passengers arriving at Memmingen airport thus triggers direct and indirect purchasing power inflows of 170 million euros in the study's target areas. The biggest winners from the purchasing power inflows are hotel and catering firms (35% of all purchasing power inflows), as well as retailers (23%). Transport services collected around 8% of purchasing power inflows, while service providers in art, culture, sport and entertainment accounted for around 7%. Economic links also benefitted regional producers, with 8% of all purchasing power inflows, which mainly came from incoming guests. In view of the direct and indirect purchasing power effects of incoming travellers by air via Memmingen airport, 1,766 jobs are statistically linked to them in target regions in 2018.

Distribution of Direct Expenditure by all Incoming Passengers in 2018, in Millions of Euros



Source: Calculations of the ifo Institute.

© ifo Institute

To identify the actual causal effects of Memmingen airport on tourism in the target regions, the study uses econometric methods to compare actual developments in tourism with the hypothetical development that would probably have arisen without the opening of the commercial airport. The airport has a particularly positive average effect on the counties and independent cities in the tourism region of the Allgäu. Estimates indicate that on average around 14.9–17.8% more guests arrived in the counties and independent cities of the Allgäu via Memmingen airport than would have been the case if the commercial airport had not been open in the time period under consideration of 2008 to 2016. The effect, however, is unequally distributed among the counties in the Allgäu region. The airport has a particularly positive effect on the number of registered arrivals in Memmingen and the Unterallgäu,

which directly surrounds the location of the airport. By contrast, for both Munich and the Oberallgäu district, which is the strongest tourism region in the Allgäu, Memmingen airport had no statistically significant causal effect on trends in tourism in the time period under consideration.

The results of the study suggest that Bavaria's tourism regions would be able to tap more value-added potential for the region's tourism sector by attracting more private travellers with the regional airport. The report shows development-potential measures in the area of tourism marketing, as well as transport links to the airport.

Memmingen Airport as a Location Factor for the Region: Results of a Business Survey

F. Dorn, L. Dörr, S. Gäbler, M. Krause, N. Potrafke, short study in cooperation with the ifo Center for Macroeconomics and Surveys conducted on behalf of the Bavarian Ministry for Economic Affairs, Regional Development and Energy, August 2018 to October 2018.

Airports as transport infrastructure facilities can influence local location, production and investment decisions, and significantly impact regional developments in the economy and employment as a result. To mark the tenth anniversary of the opening of Memmingen airport, companies in the wider region were surveyed on the regional airport's influence on the quality of the region as a business location, as well as the operational and economic activities of regional companies. Overall, 770 companies from 28 districts and independent towns in the vicinity of Memmingen airport were surveyed on their assessment of the regional airport in a non-representative special survey conducted as part of the ifo Business Survey. The response rate to the special survey was 30.5%, i.e. 235 companies gave their assessments of Memmingen airport.

Among survey participants that regularly use airports, 12% frequently use Memmingen regional airport for business travel. This means that Memmingen airport is as important to survey participants in the region as Germany's biggest airport in Frankfurt am Main is. With 51% of responses, Munich airport was cited as the top airport, followed by Stuttgart at 15%. 30% of all companies that responded in the region reported having already used Memmingen airport for business travel.

Development
potential for tourism
marketing

Airports influence
investment decisions

For 21% of survey participants the regional airport has exerted a positive influence on the reach of their business and customer relations. A good third of respondents reported that Memmingen airport has positively influenced the quality of their region as a business location. Out of the region's companies that rely on qualified foreign workers, around 31% said that flight connections to the regional Memmingen airport had a positive effect on attracting them.

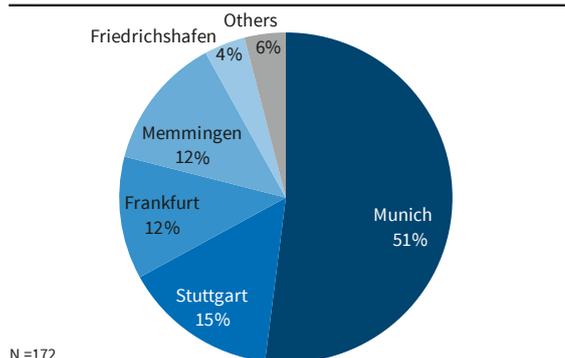
20% of survey participants expect the already approved expansion of Memmingen airport to have a positive effect. Companies that expect the airport expansion to have a positive effect on their own company specifically expect improvements in their business and customer relations (41%). Several companies expect equally positive effects in terms of acquiring specialist workers (18%), as well as employment in general (15%).

Effects stronger locally

The survey shows that the importance of Memmingen airport as a location depends on a company's geographical proximity to the airport. Companies in districts and independent towns close to the airport report that Memmingen airport had stronger positive effects on their company and location than those situated further away from the airport.

In short, based on company surveys it can be seen that Memmingen airport has very positive effects on regional companies. The airport is used by several companies in the region for business travel and also exerts a positive influence on business and customer relations, location quality and attracting specialist workers from abroad.

Airports' Share of Regular Business Travel on Behalf of Regional Companies



N = 172
Source: ifo Business Survey;
Calculations of the ifo Institute.

© ifo Institute

Former Military Facilities and their Subsequent Use: the Memmingerberg Air Base and its Subsequent Use in a Case Study Comparison

J. Blum, F. Dorn, M. Krause, M. Mosler, N. Potrafke, short study conducted on behalf of the Bavarian State Ministry for Economic Affairs, Regional Development and Energy, August 2018 to October 2018.

The closure of military facilities that are not subsequently used for civil purposes can negatively impact the purchasing power and economic structure of the regions in question

This short study compares the duration of the transformation and subsequent use of the Memmingerberg air base in the Allgäu with three former military facilities of a similar size; and also discusses developments in the respective neighbouring municipalities. The closure and subsequent use of the Laarbruch air base in North Rhine Westphalia, the Leipheim air base in the Bavarian district of Swabia, as well as the Hainberg barracks in Mellrichstadt in Lower Franconia are used as a comparison. These different case studies show that the duration and type of conversion play an important role in determining the regional economic effects, which may also depend on the respective structural framework conditions in the region.

The Budget Composition of the Government in Germany

N. Potrafke, B. Kauder, F. Dorn, S. Gäbler, L. Lorenz, M. Krause, M. Mosler for INSM Initiative Neue Soziale Marktwirtschaft GmbH, February 2018 to July 2018, publication as *ifo Forschungsbericht 95*, ifo Institute, Munich, 2018.

Budget composition is an important indicator of the politics of governments. Government decisions on the allocation of money for different tasks are discretionary, but are also influenced by economic and social factors. We examined the budget composition in Germany at the federal, state and municipal level over time and compared it with developments in other OECD countries. The results show that Germany has had high expenditure on social tasks, especially since the mid-2000s. With regard to investments, Germany's contributions were very low compared to other OECD countries and highly developed European economies. The same holds true for education expenditure, although this did increase at the federal and state level.

In terms of expenditure on defence and development, Germany did not meet its internationally agreed targets – but this also holds true for many other countries. Remarkably, the public spending ratio has decreased at the federal, state and municipal level in Germany in recent years.

Shortage of Land, Land Use and Land Development

N. Potrafke, B. Kauder, L. Dörr, F. Dorn, S. Gäbler, M. Krause, M. Mosler for the Chamber of Commerce and Industry for Munich and Upper Bavaria, February 2018 to November 2018.

This study will be conducted within a framework agreement with the Chamber of Commerce and Industry for Munich and Upper Bavaria to provide objective, science-based economic advisory work.

In the recent past, land use has moved into the centre of Bavarian policy debate. Based on the demands of the national sustainability strategy, the main question is what proportion of the area of a local authority or region should be sealed, but also how productively the area is used. The first part of the study examines how Munich and the region of Upper Bavaria compare with Bavaria, Germany and Europe in various dimensions of area policy.

A key indicator of land use is the area of settlement and traffic. The area of settlement and traffic accounted for 14.2% of the total area of Germany in 2016, while the shares for Bavaria (12.2%) and Upper Bavaria (12.4%) are slightly lower.

To approximate the productivity and efficiency of land use, GDP per hectare of settlement and traffic area is a potential indicator. There are substantial regional disparities between rural and urban areas. Throughout Germany, the average GDP per hectare of settlement and traffic area amounts to 617,000 euros. The city of Munich (4.7 million euros per hectare of settlement and traffic area) is in the top German group along with Stuttgart and Frankfurt am Main. In a European comparison of settlement and traffic areas, Upper Bavaria, with a share of 14% in 2015, ranks among the upper third.

Another part of the study deals with intercommunal area development. Municipal planning sovereignty in area policy does not necessarily lead to an efficient

solution with regard to cross-regional land use. However, incentives for municipalities to operate nationwide land management and to achieve more efficient land use are scarce. Therefore, the study examines which obstacles deter municipalities from cooperation and how intercommunal land development can be stimulated.

Possible aspects that may generally be an obstacle include the design of funding programmes, the structure of municipal financial compensation and the fear of giving up fiscal autonomy. There are also non-fiscal obstacles of cooperation such as lack of experience with the legal framework or co-inhibition due to party affiliation or personal antipathies. The study discusses various economic, regulatory and informational instruments to stimulate intercommunal land development. Informational instruments seem very suitable. Their aim is to reduce the costs of obtaining information and to convey know-how for the implementation of intercommunal commercial areas. The study recommends constructing a website for inter-communal land cooperation. Decision-makers should rely on the published information from as early as the planning and preparation phase. The website could be supplemented by information events.

Empirical Essays on Fiscal Federalism and Political Economy in Germany

M. Krause, completed doctoral project, publication as *ifo Beiträge zur Wirtschaftsforschung* in 2019.

The dissertation consists of six self-contained chapters that are related to selected incentives in fiscal federalism by using the example of the federal system in Germany. After an introduction to the topic, the first part of the dissertation elaborates on political incentives while the last two chapters also focus on fiscal incentives.

Chapters 2 and 3 examine election cycles, based on political business cycle theories. Chapter 2 examines whether election cycles exist in the fees charged by German municipalities. Fees are interesting to investigate as they are levied according to the benefit principle and have to be equivalent to the (expected) costs of the public service that they are levied on. This should constrain governments. The results show, however, that municipalities have leeway to decide on fees and use this leeway to improve their election prospects. Chapter 3 investigates election cycles in the salary increases of German state MPs, for which the states have

Nationwide land management

Setting fees to improve election prospects

the decision-making authority. The results do not show that electoral motives influence MP salary increases. Politicians can, by contrast, increase their salaries at any point in time.

Chapters 4 and 5 investigate how government ideology influences economic policy-making. Chapter 4 analyses whether government ideology influences income inequality in the public sector of the German states by using data on the salaries of civil servants. The results do not show that left-wing governments were more active in decreasing income inequality in the public sector than centre or right-wing governments. Chapter 5 analyses whether government ideology predicts the tax policies of German states. A reform of the fiscal constitution in 2006 allowed the states to set the rates of the real-estate transfer tax. After investigating the tax rate increases of the German states, the results show that left-wing governments were more active in increasing tax rates than right-wing governments. Left-wing and right-wing governments may thus well differ in their policies.

Chapters 6 and 7 investigate fiscal incentives within the federal system in Germany by analysing whether the institutional setting also provides incentives for states' tax policies. The German fiscal equalisation scheme redistributes revenues among the federal and state levels and between states equalising funds for the states. The devolution of tax setting powers to the states in 2006 provides an interesting set-up to investigate the combination of tax autonomy and fiscal equalisation. The descriptive results in Chapter 6 and the empirical analysis in Chapter 7 show that equalisation substantially influences the tax policies of the states. The redistribution of revenues within the equalisation scheme provides incentives for the states to raise rather than to lower their tax rates.

The results of the dissertation show that political and fiscal incentives may well influence economic policy-making. Electoral motives and government ideology can explain parts of individual economic policies but the institutional set-up in federal systems may also provide incentives for governments.

Current Projects

Evaluation of Tax Concessions

C. Fuest, F. Neumeier, B. Kauder, L. Immel, S. Gäbler in cooperation with FiFo, Cologne, Centre for European Economic Research (ZEW), Mannheim, and Fraunhofer Institute of Applied Information Technology (FIT), Sankt Augustin, for German Federal Ministry of Finance, June 2017 to March 2019.

According to the guidelines for government subsidies (“erweiterte subventionspolitische Leitlinien”) of the German federal government, all government grants need to be evaluated on a regular basis. This applies to direct subsidies as well as tax concessions. In 2007 and 2008, 20 of the most important tax concessions were evaluated. Now, the remaining 32 concessions currently effective are to be examined. The aim is to quantify and to evaluate those concessions with respect to several factors including their effectiveness, efficiency, transparency and sustainability.

Report on Reviewing the Weighting of Inhabitants in the System of the Municipal Fiscal Equalisation Scheme in North Rhine-Westphalia

N. Potrafke, B. Kauder, L. Dörr, S. Gäbler, M. Krause for the Ministry of Homeland, Municipal Affairs, Construction and Equality of the State of North Rhine-Westphalia, May 2018 to February 2019.

This project evaluates the so-called “Hauptansatzstaffel” for municipal spending in the horizontal fiscal equalisation scheme in North Rhine-Westphalia. The Hauptansatzstaffel postulates a non-linear relationship between population and fiscal needs. Together with other elements (demography, pupils, social spending, centrality, and area) it results in a figure describing fiscal need in the horizontal fiscal equalisation scheme.

European Austerity Discourse: Is Too Much Saving Bound to Backfire?

N. Potrafke, K. Gründler for the Konrad-Adenauer-Stiftung e.V., October 2018 to February 2019.

For some time now, there has been growing criticism in Europe of a supposedly overly restrictive austerity policy. The lack of clarity on how to define and measure austerity, however, leads to contradictory results and different

Fiscal equalisation scheme

economic policy implications in both political discussions and economic studies. This project describes the ambiguity of the term “austerity” in economic studies and is intended to contribute to a more objective communication of the actual economic situation in the euro area. Two basic questions are examined: research question (1) (“Austerity in politics, the media and the population”) examines (historical) trends in the relevance of the topic in the media and the political discussion, and analyses the attitude of the population towards austerity policies. Research question (2) (“Austerity in Economics”) analyses patterns in the definition, use and statistical measurement of austerity in economics studies.

ifo and FAZ Economists Panel

N. Potrafke, B. Kauder, L. Dörr, F. Dorn, J. Blum, S. Gäbler, M. Krause, internal project, ongoing.

The ifo and *Frankfurter Allgemeine Zeitung* (FAZ) Economists Panel surveys a representative group of economics professors at German universities on current economic policy issues on a regular basis. The panel’s aim is to offer the public a differentiated perspective on economists’ views on key challenges facing Germany. The economists are surveyed on different topics every two months and in the light of current events within standardised surveys in a digital form. The panel takes national and international issues into account, primarily focuses on qualitative information and asks the economists for their appraisals and expectations.

Studies in Political Economy and Defence Economics

J. Blum, ongoing doctoral project.

This ongoing doctoral project examines various topics at the interface of public finance – in particular defence spending – and political economy. One study investigated whether changes in government influence compliance with international agreements and applied the NATO 2% spending target as a test case. Another study estimated demand functions for military expenditure and examined differences in the spending behaviour of democracies and autocracies.

Studies in Public Finance and Political Economy

L. Dörr, ongoing doctoral project.

This doctoral thesis looks at several different topics at the interface between public finance and political

economy. One of its focal points is the analysis of the economic impacts of infrastructure access. Another project examines the effects of right-wing populist parties at the regional level.

Sustainability and Distributional Issues: Studies in Public Finance and Political Economy

F. Dorn, ongoing doctoral project.

In this ongoing doctoral project various topics at the interface of public finance and political economy are examined. The project focuses on the impact of policies, institutions and globalisation on public finances, public sector performance and inequality. The project also examines how these factors influence the rise of populism and political polarisation.

Studies in Public Finance and Political Economy

A. Fabritius, ongoing doctoral project.

This ongoing doctoral project analyses the relationship between official development assistance and military expenditure. It examines the extent to which donor countries use official development assistance and military expenditure as strategic complements. Further research projects at the interface between political economy and public finance are in the pipeline.

Relationship between development assistance and military expenditure

Studies on Taxation, Public Finances and Regional Economics

S. Gäbler, ongoing doctoral project.

This Ph.D. thesis addresses various topics in the field of the public sector’s taxation and expenditure structure. There is a special focus on the German local level in view of the institutional and political framework conditions, as well as regional interrelations.

Fiscal Sustainability in Public Finance

M. Mosler, ongoing doctoral project.

This ongoing doctoral project examines the fiscal sustainability of public budgets using quantitative methods, primarily from time series and panel data econometrics. There is a special focus on public debt management in developing countries and the development of tax simulation models.

ifo Center for Labour and Demographic Economics

The Center's current research addresses several pressing, yet under-researched, societal issues; it combines theoretical analyses with state-of-the-art causal inference methods, and draws upon unique data sources.

ECONOMIC UNCERTAINTY AND THE FAMILY

Can changes in the fertility decisions of couples be attributed to demand-induced changes in labour market opportunities? Are people more likely to marry in recessions or in booms? Does youth unemployment affect intergenerational relations? The Center's first research area aims to improve our understanding of the relationship between business cycles and family-related decisions. To that end, the Center has set up the junior research group EcUFam (Economic Uncertainty and the Family), which is led by postdoctoral researcher, comprises three doctoral students, and is funded by the Leibniz Competition (SAW). Deploying a variety of methods and datasets, the group conducts research into the extent and importance of economic uncertainty as induced by poor macroeconomic conditions for key family outcomes including fertility, marriage and divorce, intergenerational relationships, gender-role attitudes and infant health. The working group is located at the ifo Institute, but both the scope of its research and its scientific network are international, with project partners and supporting institutions in Europe and beyond.

THE ECONOMICS OF VIOLENCE AGAINST WOMEN

Violence against women is a global pandemic that poses serious health threats to women and also has adverse consequences on their children, both in the short and long term. Intimate partner violence, the most common form of violence against women, is the leading cause of female homicides worldwide. Within the European Union, estimates point to 22% of women experiencing intimate partner violence at some point in their lifetime. In many developing countries, this rate far exceeds 30%. Against this backdrop, the Center's second research area aims to provide answers to three overarching questions. The first is fundamentally about the origins of violence against women: given that the prevalence of violence against women varies considerably both across and within countries, what is the role of ancestral cultural factors and historical institutions in shaping those differences? This leads to the second question, which addresses the implications of changing economic and social environments. Considering that the last half-century has witnessed

profound changes in women's economic and social opportunities, what implications does this have for violence against women? And the third question is: which type of interventions might be effective in preventing violence against women? The Center addresses these questions from both developed and developing countries' perspective. In doing so, it uses sound theoretical frameworks to derive hypotheses and, on that basis, implements empirical approaches that draw upon various unique data sources and utilise both quasi-experimental and experimental research designs.

IMMIGRANT INTEGRATION

Immigrant children constitute the fastest-growing segment of the population in many European countries, thus shaping the future of these societies. The successful integration of immigrant children into host societies, both economic and social, is therefore an issue of paramount social importance. The Center's third research area studies the determinants of immigrant children's educational and social integration. Among other projects, a hallmark study was initiated in 2015: together with external collaborators, the Center collected data on over 4,500 15-year-old pupils at almost 60 secondary schools in Germany. Respondents participated in both a classical survey and a behavioural experiment (an investment game). This data collection represents the first attempt to combine a large-scale survey with a behavioural lab-in-the-field experiment. During the evaluation period, but also in the years ahead, it allows the Center to provide a comprehensive picture of immigrant children's integration into the host society including traditional outcomes, such as their educational achievements, aspirations and expectations, ethnic identity, social network, civic and social engagement, and political interest, as well as novel experimental measures like cooperativeness, trust, and reciprocity. The newly collected data will also allow for a first application of causal inference methods to experimental data on social behaviour, thus unearthing policy interventions that foster or hinder immigrant children's social integration.

THE SOCIAL IMPACT OF AIR AND NOISE POLLUTION

One of the most pressing issues in agglomerated areas around the world is environmental and noise pollution. As one of the main externalities of economic activity, the effects of pollution on health, productivity and human interaction are highly relevant for policymakers,

Economic uncertainty affects marriage and divorce rates

but not yet fully understood. In its fourth research area, the Center analyses the impact of man-made environmental pollution, and focuses on empirically establishing causal links from air, soil and noise pollution to population health, education, early child development, productivity and behaviour. Furthermore, the Center examines the effects of public transport in metropolitan areas, focusing on its role in traffic congestion, road safety, pollution, and human health. The Center's research in this area uses survey, administrative and big data in novel ways and exploits quasi-experimental research designs.

Projects Completed in 2018

Germany 2017

H. Rainer, C. Albrecht, A. Fichtl, T. Hener, J. Ragnitz, in cooperation with ifo research professor S. Bauernschuster, University of Passau, for the German Federal Ministry for Economic Affairs and Energy, March 2016 to March 2018, publication as *ifo Forschungsbericht* 96, ifo Institute, Munich, 2018, and in *ifo Schnelldienst* 71(21), 2018.

The study's main goal is to investigate the current attitudes and behaviours of a unified Germany's citizens. The preceding study "Germany 2014" described the development in the attitudes and behaviours of German citizens in the East and West over a long period, from the time of separation up to the first 25 years after unification. Building on this, we extend the analysis to include the most recently available data. Apart from a purely descriptive analysis of attitudes towards politics, the economy, values, norms and identities, as well as the challenges currently faced by society, we also examine their determinants with a view to formulating policy recommendations.

In the first part of the study, a literature review summarises and evaluates existing results and findings on the topic. To this end, we review the preceding study "Germany 2014", as well as leading scientific papers from the intersecting areas of economics, sociology, psychology and political sciences. In the second part, we conduct our own empirical analysis, examining existing datasets.

The results show that a constant process of rapprochement is underway in many areas of society.

Opinions in the two parts of the country rarely diverge. The attitudes of eastern Germans often converge with those of their western counterparts. In some cases, with regard to predominant gender roles for example, western Germans orient themselves towards the attitudes of eastern Germans. The main pattern is that, in most areas, the East-West differences among younger interviewees are narrowing. However, experience of two different political systems in the two parts of the country is still noticeable in almost all questions of attitude.

Convergent attitudes in eastern and western Germany

International Comparison of Labour Market Flexibility Index

V. Meier for the Chamber of Commerce and Industry for Munich and Upper Bavaria, November 2017 to January 2018, publication as *Impulse für die Wirtschaftspolitik*, Chamber of Commerce and Industry for Munich and Upper Bavaria, Munich, 2018.

This study reviews the literature on labour market flexibility indices. It focuses on the family of OECD labour market flexibility indices and the Heritage Foundation's index of economic freedom in the labour market. A labour market flexibility index covers regulations of individual and collective dismissals, as well as rulings on temporary contracts. The study shows methodological details of the indices, including the weighting factors of their components.

Incentives for the Elderly to Remain in the Labour Force

V. Meier. V. Endl-Geyer for the Chamber of Commerce and Industry for Munich and Upper Bavaria, April 2018 to May 2018.

The study was conducted within the framework agreement with the Chamber of Commerce and Industry for Munich and Upper Bavaria. Senior age groups are increasingly retiring, while substantially fewer young people are entering the labour force in Germany. This is of great importance given the prevailing shortage of skilled workers. This study examined the current status of the employment rate of elderly people and its development in Germany, and especially in Bavaria. It followed a policy proposal concerning the creation of incentives to remain in the labour market until the age of retirement and beyond.

Employment Incentives for Women

V. Meier, V. Endl-Geyer for the Chamber of Commerce and Industry for Munich and Upper Bavaria, October 2018 to December 2018.

Increasing female employment

The study will be conducted within the framework agreement with the Chamber of Commerce and Industry for Munich and Upper Bavaria. In this study, female labour market participation over the last 20 years in Germany, and especially in Bavaria, is described in order to provide policy recommendations to increase female employment. The employment rate of women is rising, but a shortage of skilled workers nevertheless prevails. Potential improvement lies not only in female labour market participation, but also in the number of working hours worked by women.

Current Projects

Economic Uncertainty and the Family (EcUFam)

N. Danzer, H. Rainer, B. Schulz, T. Hener, P. Reich, F. Siuda, M. Fabel, supported by the Leibniz Association, July 2015 to December 2019.

The junior research group, EcUFam (Economic Uncertainty and the Family), looks at issues in the area of “Economic uncertainty and the family”. As part of the project, several doctoral projects are being funded by the Leibniz Association and conducted by F. Siuda (ongoing doctoral project, as of October 2015), P. Reich (ongoing doctoral project, as of September 2015) and M. Fabel (ongoing doctoral project, as of October 2016).

Globalisation, Female Empowerment, and Domestic Violence

E. Guarnieri, ongoing doctoral project, since September 2016.

ifo Center for the Economics of Education

The ifo Center for the Economics of Education studies the determinants and consequences of education from an economic perspective. Its research aims to further our understanding of how the state can empower people to benefit from the potential of an open society, as part of a social market economy that is up to face the challenges of modern times.

Modern growth economics identifies the generation of knowledge as a primary determinant of long-term economic growth. Knowledge generation includes both the development of individual skills and the generation of new knowledge that further advances the world's technological frontier. However, little can be learned from such general macroeconomic insights for concrete policy-making at the micro level. The research programme of the ifo Center for the Economics of Education therefore asks which kind of knowledge matters most for prosperity, what determines knowledge generation, and which kind of policy can contribute to it. The Center thus analyses how education policies can advance the knowledge base of highly qualified future workers and the innovative capacity of the economy. To understand which policies work, the Center primarily employs microeconomic methods that allow for experimental or quasi-experimental evaluation – techniques that are increasingly proving indispensable in a wide variety of contexts, but are rarely used in this crucial area in Germany.

Education systems generate the human capital of a highly educated workforce that is of crucial importance to the global competitiveness of modern economies exposed to an ever-changing world. In the long run, only continuous advances in knowledge make it possible to escape worldwide low-wage competition. Moreover, education is a crucial determinant of equity and participation in society. By investigating which policies influence the development of human capital, the Center explores public policies that foster growth and cohesion in a changing world. Specifically, the Center's research is structured into four areas, two of which address the effects of education on individual and societal prosperity, and the other two of which address political and other determinants of education:

EDUCATION AND INDIVIDUAL OUTCOMES: LABOUR MARKETS AND LIFECYCLES

The first research area analyses the importance of education for individual opportunities in the labour

market and in everyday life, focusing on individuals and their employment lifecycles. It studies the role of skills in individual employability and social participation in a rapidly changing society. One focus is on the dual vocational education system, an important pillar of human capital formation in German-speaking countries, combined with the relative importance of vocational and general education for productivity. A research project completed in 2018 estimates the employment effects of vocational vs. general education over the lifecycle. Results suggest that an initial employment advantage of individuals with vocational compared to general education turns into a disadvantage later in life. A dissertation completed in 2018 studies various aspects of how education and other determinants affect individual labour market outcomes. Furthermore, the Center investigates the opportunities and limitations of adult education, training and lifelong learning.

EDUCATION AND LONG-TERM DEVELOPMENT: ECONOMIC GROWTH AND PROSPERITY

Beyond its individual impact, education is also crucially important to the prosperity of society at large; and for economic development in the long run. One focus in this area is on the role played by international student achievement in economic growth and social cohesion today. An additional focus is on a historical perspective, such as how the diffusion of education before and during industrialisation changed historical development. In addition, the historical perspective is combined with the modern outlook by assessing the long-term persistent relevance of historical circumstances to economic development today.

DETERMINANTS OF EDUCATION: CULTURE, RESOURCES AND INSTITUTIONS

Given the central importance of education to the prosperity of individuals and societies, the third research area studies the determinants of educational performance. A particular focus is placed on three groups of determinants: 1) cultural factors including families, values, and norms; 2) resources spent on education; and 3) the institutional framework of the education system. Research into these determinants often draws on rich micro data from various international student achievement tests. It focuses on topics like the integration of immigrant children, the effectiveness of teachers, the remediating effects of mentoring programmes,

Vocational education less advantageous over time

Education and social cohesion

student assessments as an accountability tool, and the strengths and weaknesses of digital learning methods. Currently, one project evaluates the effectiveness of a 1:1 mentoring programme for secondary-school students. A dissertation project completed this year studies, among other things, how the dependence of children’s educational outcomes on parental background can be reduced. Another completed dissertation project analyses the individual and institutional determinants of education and occupational choice.

GOVERNANCE OF EDUCATION: EFFICIENCY AND EQUITY

The fourth research area focuses on how the political governance of education systems affects educational success and equity. Central elements of the governance of education systems studied in this area include exam systems, autonomy, competition, and tracking. One project completed this year found that the introduction of external comparative standardised testing improves student achievement. The area also studies the feasibility of governance reforms and their acceptability in the population, drawing on the Center’s own opinion survey on education policy. The thematic focus of the fifth ifo Education Survey, released this year, was on the public’s opinions on gender equality in education and on the opinions of youths on various education policy topics compared to those of adults. The Center also coordinates the European Expert Network on the Economics of Education (EENEE), a Europe-wide policy advisory network funded by the European Commission. Ultimately, the evaluation of policies with (quasi-) experimental methods aims to bring evidence-based policy advice into the political decision-making process.

External testing improves student achievement

Letters 153, 2017; *CESifo Economic Studies* 63(3), 2017; *Large-scale Assessment in Education* 5(12), 2017; CESifo Working Paper No. 5720, 2016.

The Programme for the International Assessment of Adult Competencies (PIAAC) provides information on key adult skills in 33 countries. On the basis of these data, the project conducted research into the acquisition and utilisation of skills. In particular, the project aimed to improve the understanding of the causal effects of skills on labour market outcomes using improved identification methods. In addition to drawing on international PIAAC data, the analyses are also based on data from the German longitudinal PIAAC survey, in which PIAAC participants were surveyed in three additional waves in 2014, 2015 and 2016. Furthermore, German PIAAC data has been linked to administrative data on individuals’ employment histories. Within the overall project, the PIAAC data and the project results were communicated to the scientific community and to stakeholders from politics and industry.

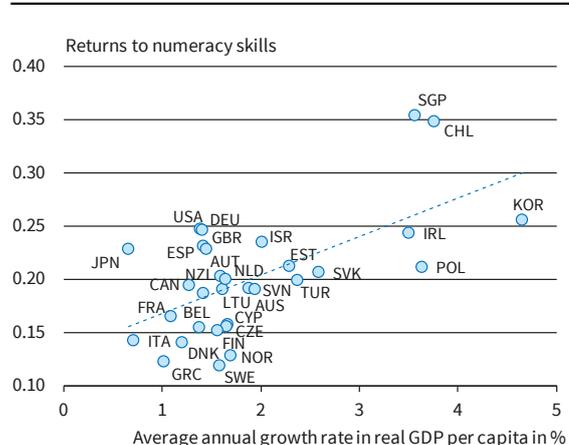
One study conducted within this project estimates the employment effects of vocational versus general education over the lifecycle. Results suggest that the initial employment advantage of individuals with vocational compared to general education turns into a disadvantage later in life. This trade-off is strongest in countries like Austria, Denmark and Germany, which are characterised by a strong apprenticeship system.

Projects Completed in 2018

Acquisition and Utilisation of Adult Skills – A Network for Analysing, Developing and Disseminating PIAAC

F. Hampf, L. Wößmann, M. Piopiunik, S. Wiederhold in cooperation with ifo research professors E.A. Hanushek, Stanford University and G. Schwerdt, University of Konstanz, funded through the Leibniz Competition as part of a consortium headed by GESIS, February 2015 to December 2018, publication of results in *European Economic Review* 73, 2015; *Economics*

Economic Growth and Returns to Skills 1990–2011



Source: Hanushek, Schwerdt, Wiederhold and Wößmann (2017), *Economics Letters* 153: 15–19. © ifo Institute

A further study analyses the reasons for large differences in returns to skills across the countries. Results suggest that returns to skills are systematically larger in countries that have grown faster in the recent past (see Figure). These results are consistent with models where skills are particularly important for adaptation to dynamic economic change.

Another study shows that the skills needed to master information and communication technologies lead to higher earnings in the labour market. It implemented an instrumental-variable model that exploits the fact that skills increase with regular use, which is fostered by fast internet access.

Accountability and School Institutions in Cross-Country Perspective

L. Wößmann, A.B. Bergbauer in cooperation with ifo research professor E.A. Hanushek, Stanford University, funded by the Smith Richardson Foundation, October 2016 to September 2018, publication of results in NBER Working Paper Nr. 24836, 2018; *ifo Schnelldienst* 71(20), 2018; VOX CEPR Policy Portal.

Student testing has been expanding rapidly around the world. But the surrounding debate is confused by failure to differentiate among alternative forms and uses of testing. Different configurations of assessment usage are likely to generate performance-conducive incentives of different strengths for different stakeholders in different school environments. How the assessments affect student learning will depend on how the information created is translated into incentives for the actors and into behavioural results.

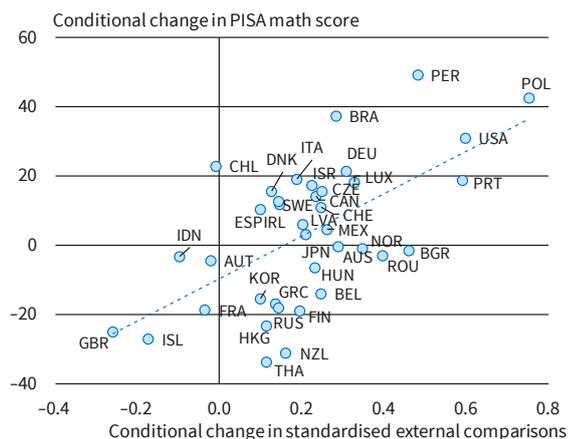
This project fits into a general investigation of how institutional aspects of education systems work and whether reforms are successful in increasing the performance of their students. The analysis combines international student achievement data over the past 15 years in 59 countries with accountability reforms. It exploits the panel structure of the PISA data to include country-fixed effects. In addition, the project developed a simple theoretical model of a tree of principal-agent relationships.

Results suggest that some uses of student testing affect student learning, while others have no discernible impact. In particular, expanding standardised testing with external comparisons, which are usually conse-

quential, improves student achievement in maths, science, and reading. By contrast, internal testing that simply informs or monitors progress and teacher inspectorates without external comparisons have little discernible effect on overall performance. Introducing standardised monitoring without external comparison has a positive effect in countries that were initially performing poorly, but not in high-performing countries. A similar pattern of larger impacts in poorer performing systems shows for the impact of school-based external comparisons.

Internal testing has little discernible effect

Countries that Expanded the Use of Standardised Testing for External Comparison between 2000 and 2015 Saw the Achievement of their Students Improve



Notes: This graph is the depiction of an added-variable plot of the change in countries' average PISA maths score between 2000 and 2015 against the change in the use of standardised testing for external comparison, both conditional on a rich set of student, school, and country controls.

Source: Own depiction based on Bergbauer, Hanushek and Wößmann, NBER Paper Nr. 24836, 2018. © ifo Institute

Teacher Effectiveness and its Determinants in Germany: An In-Depth Analysis

B. Enzi, N. Obergruber, L. Wößmann, funded by the German Research Foundation (DFG) in the DFG Priority Programme 1646 "Education as a Lifelong Process: Analyzing Data of the National Educational Panel Study (NEPS)", October 2015 to September 2018, publication of results in *ifo Beiträge zur Wirtschaftsforschung* 75, ifo Institute, Munich, 2017; *ifo Beiträge zur Wirtschaftsforschung* 80, ifo Institute, Munich, 2018; ifo Working Paper No. 225, 2016; No. 243, 2017; IZA Discussion Paper No. 11732, 2018.

The project aimed to analyse the effectiveness of teaching and its determinants based on student-level achievement data from the German National Educational Panel

Teachers with better grades are more effective

Study (NEPS). A first goal of the project was to exploit the longitudinal structure of the NEPS data to estimate value-added models of student achievement that include teacher-fixed effects. Based on the estimated distribution of teacher quality, the effects on student achievement of having an effective teacher can be quantified. Results indicate that there is lower variance in teacher quality in Germany than in the United States.

A second goal of the project was to study the determinants of teacher quality. The NEPS survey information exceeds the information on teacher characteristics typically available in administrative linked student-teacher datasets, enabling new and detailed analyses of the determinants of teacher effectiveness. To gain reliable results on teacher effectiveness in Germany, multiple estimation strategies were used. A value-added model of cognitive achievement made it possible to estimate the effects of pre-service cognitive and pedagogical teacher skills on student achievement. Results suggest that teachers' grades in the high-school leaving degree and in a practical test in the study programme are good predictors of teacher effectiveness. In models that exploit within-student variation across subjects, the project also investigated a battery of other potential determinants of teacher quality.

Other parts of the project studied additional topics in the economics of education using the NEPS data. One project analysed predictors of gender differentials in test scores and teacher assessments. Another project studied the determinants of the choice of maths-intensive occupations. Finally, one project performed an evaluation of the staggered introduction of a reform across West German states between 1965 and 1982, after which high-track students automatically received an interim degree upon successful completion of grade 9.

The Role of Information for Public Preferences on Education: Evidence from Representative Survey Experiments

K. Werner, completed doctoral project, October 2013 to July 2018, publication of results in *Journal of Public Economics* 167, 2018; CESifo Working Paper No. 7000; No. 7192, 2018, Rationality & Competition CRC Discussion Paper 128, 2018.

This doctoral project aims to empirically analyse questions concerning the economics of education, and particularly education policy. The first key aspect is

the relationship between public opinion and the level of information of the population. As part of this, a first research project collected data on the similarities and differences in the opinions held by the U.S. and German public. Respondents in both countries hold different views on a variety of issues, but they react to information in very similar ways. This suggests that the difference in policy outcomes between the U.S. and Germany is largely driven by institutional differences, rather than divergent preferences.

A second research project focuses on public opinion on state spending in different areas of education. This research shows that providing respondents with the information that, according to numerous studies, early childhood education has larger beneficial effects than other types of education spending, raises support for increased spending for preschools. These information effects are driven by the pervasive underestimation of positive effects of investment in early education.

A second key aspect focuses on the question of how to reduce the association between children's education outcomes and parental background. A first research project analyses the opinions of the adult population on structural reform of the education system that aims to increase educational opportunities for children from disadvantaged backgrounds. As it turns out, the majority of the German public perceives inequality in educational opportunities as problematic and supports reforms in this area.

A second research project investigates divergence in the educational aspirations of different socioeconomic groups. Its results show that information on earnings and the unemployment rates of university graduates, as well as information on tuition fees and student aid, raise the aspirations for their children's education less among respondents without university education than for respondents with university education. This suggests a limited scope for information interventions to reduce the large gap in educational aspirations between children from different socioeconomic backgrounds.

Microeconomic Analyses of Individual and Institutional Determinants of Education and Occupational Choice

N. Obergruber, completed doctoral project, October 2013 to July 2018, publication of results in *ifo Beiträge zur Wirtschaftsforschung* 80, ifo Institute, Munich, 2018.

In four self-contained chapters, this doctoral thesis studies the determinants that causally influence the educational attainment of people or their occupational choice. The first chapter investigates the influence of parental separation on the reading-skill development of 10-year-old students. The analysis uses panel data from the National Educational Panel Study (NEPS) and a value-added approach to show that the performance of children is particularly negatively affected in the year before their parents separate.

The second chapter investigates the consequences of an educational reform in Germany in the 1960s and 1970s. The reform rewarded drop-outs from the high track with a lower-track school degree. Exploiting differences in the timing of implementation between the German states, the analysis finds that the reform reduced school switching and increased years of schooling, completion of high track, and the likelihood of holding a university degree.

The third chapter descriptively analyses maths intensity of occupations chosen by 15-year-old students depending on their relative ordinal rank in class in maths compared to German. The strong correlation of maths intensity of the chosen occupation and better rank in math compared to German is driven neither by school- or class-specific factors nor by labour demand, parents' occupations, grade levels, or cognitive skill levels. The correlation is best explained by measures of students' interests.

The fourth chapter studies long-run consequences of wealth inequality. The equal-division inheritance rule in agriculture in the 19th-century German Empire led to an earlier adaption to industrialisation, which is observed in occupation data. This head start for counties with an equal division of inheritance has positive income effects that still persist today.

Current Projects

European Expert Network on Economics of Education (EENEE)

L. Wößmann, S. Kersten, F. Kugler, U. Baldi-Cohrs in cooperation with the Centre for European Policy Studies (CEPS) and senior experts from leading European universities on behalf of the European Commission, Directorate General Education and Culture, January 2017 to December 2020.

The European Expert Network on Economics of Education (EENEE) aims to contribute to the improvement of decision-making and policy development in education and training in Europe. It advises the European Commission on the analysis of economic aspects of educational policies and reforms. It aims to support the dissemination of knowledge of the economics of education in Europe.

In 2018, EENEE published five analytical reports and associated policy briefs. The topics include the benefits of early childhood education, class size and student outcomes, education externalities, civic behaviour, and transnational collaborative partnerships. Two additional analytical reports on digital technology and on vocational education over the lifecycle are being finalised. In a further task of evidence-based policy advice, the EENEE network answered one ad hoc question about the impact of Finnish budget cuts on access and quality of education. To strengthen the interaction between academic research and policy making, EENEE hosted a conference in Brussels in November 2018 together with the Network of Experts working on the Social Dimension of Education and Training (NESET II). The participating policymakers and researchers from EU member states discussed many aspects of the conference topic "Strengthening Common European Values through Education: What does the Evidence Tell us?" Finally, EENEE maintains a website on Economics of Education in Europe (www.educationeconomics.org). In addition to providing information on the activities described above, the website regularly updates extensive lists of references to the literature on key topics in the economics of education and on European experts in the field.

The Political Economy of Education Policy: Insights from a Public Opinion Survey

L. Wößmann, E. Grewenig, S. Kersten, F. Kugler, P. Lergertporer, L. Simon, K. Werner in cooperation with ifo research professors M.R. West, Harvard University, G. Schwerdt, University of Constance, internal project in continuation of a project funded 2014–2017 by the Leibniz Competition, January 2018 to December 2019, publication of results in *Journal of Public Economics* 167, 2018; *European Journal of Political Economy* 53, 2018; *ifo Schnelldienst* 67(18), 2014; 68 (17), 2015; 69 (17), 2016; 70 (17), 2017; 71 (17), 2018; *schulmanagement* 6/2016; Harvard Kennedy School PEPG Working Paper 15-02, 2015; CESifo Working Paper No. 5938, 2016; No. 6192, 2016; No. 6602, 2017; No. 7000, 2018; No. 7192, 2018; No. 7222, 2018.

The economics of education in Europe

Providing information changes public opinion

The aim of the project is to better understand public opinion on a broad range of topics in education policy. To this end, the project conducts an annual representative opinion survey of the adult German population on various topics of education policy. To study the causal effect of information provision on public opinion, survey experiments are conducted in which randomly selected subgroups of respondents are provided with certain pieces of information before answering a question common to all respondents. Comparing the answers with a control group makes it possible to quantify the causal effect of the respective information on public opinion.

The ifo Education Survey 2018 surveyed over 4,000 adults and, for the first time, 1,000 youths aged between 14 and 17. The first part of the ifo Education Survey 2018 covers the opinions of Germans on gender topics, gender-based discrimination and education policy measures for equal opportunities. The second part focuses on youths' opinions on various education policy topics and compares them with those of adults.

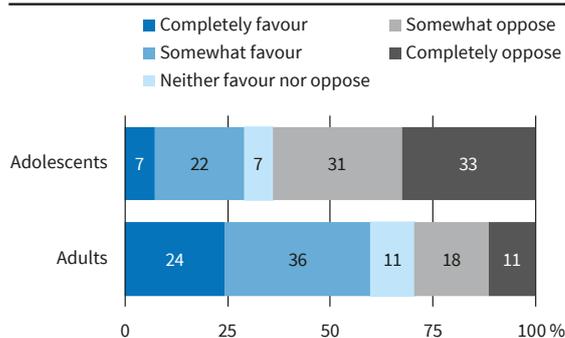
Young and old do not always disagree

Results suggest that a clear majority of both youths and adults are in favour of covering the topics of the #MeToo debate at school. 82% of youths and 86% of adults support covering the topic of equal opportunities for men and women at school. Similarly, very high shares of youths (81%) and adults (78%) also think that the topic of sexual harassment should be dealt with at school.

In terms of education topics more generally, the survey reveals interesting commonalities and differences in the opinions of youths and adults. 60% of adults support all-day schools until 3 p.m., for example, whereas 64% of youths oppose the concept (see Figure).

Besides the descriptive depiction of the results of the annual surveys, the project also includes a number of studies that investigate different topics covered by the ifo Education Survey more deeply. Among others, separate studies address topics such as the effects of information provision on preferences for educational spending, the effect of information about the returns and costs of education on educational aspirations, tuition fees, educational inequality, the preferences of political parties, class size, and the effect of gender norms on expected labour market participation.

Opinion about Whole-day Schooling System of Adolescents and Adults



Source: ifo Education Survey 2018. For more details see ifo Schnelldienst 71(17), 2018. © ifo Institute

Educational Choices, Market Design, and Student Outcomes

K. Werner, L. Wößmann in cooperation with the Wissenschaftszentrum Berlin, funded by the German Research Foundation (DFG) in the CRC/Transregio 190 “Rationality and Competition”, January 2017 to December 2020, publication of first results in NBER Working Paper No. 24836, 2018; CESifo Working Paper No. 7000, 2018; No. 7192, 2018; No. 7222, 2018; Rationality & Competition CRC Discussion Paper 128, 2018.

Education decisions are key determinants of labour market opportunities, social mobility and economic growth. This project looks at the extent to which traditional models can explain utility-maximising individual education decisions like, for example, the decision between an apprenticeship and university education. There is a special focus on potential information asymmetries that can explain differences in education decisions as part of a traditional cost-benefit model. To this end, random subgroups of participants in a survey receive relevant information in survey experiments before answering the same questions as an uninformed control group. This makes it possible to identify the causal effect of information provision on reported decisions. In addition, the project investigates the influence of behavioural factors like self-confidence, time and risk preferences on behaviour in education decisions. To obtain a comprehensive picture of the relevant factors influencing educational decisions, the project works with samples of both adults and adolescents between 14 and 17 years of age.

Evaluating the Effectiveness of a Mentoring Programme

S. Resnjanskij, F. Hampf, L. Wößmann, A. Wurm, J. Ruhose, S. Wiederhold, funded by a consortium of non-profit foundations and the Commissioner of the Federal Government for Migration, Refugees and Integration, June 2015 to March 2021.

Social mobility in Germany is still very low. This is reflected in the fact that children with disadvantaged or migration backgrounds are most likely to visit the lowest academic school track in secondary school. These children often do not make the leap to an apprenticeship position or further schooling. Instead, they get stuck in the transitional system, giving them little chance of upward social mobility. Possible reasons for the lack of perspective are inadequate assistance for parents with low income or education levels in school-related work, low school quality, a resulting lack of training maturity, only vague ideas about potential jobs, and a lack of detailed knowledge about the German educational system. Given these problems, mentoring and coaching programmes may be an effective way to improve the future prospects of students from low-track schools. This project investigates how one of the largest 1:1 mentoring programmes in Germany affects school grades, social competencies, and the labour market success of students from low-track schools. The evaluation aims to investigate both the short-term and long-term effects of the programme; and to uncover concrete mechanisms behind them to provide generalisable recommendations for the design of mentoring programmes. In 2018, the focus on the investigation of the potential long-term outcomes of the mentoring programme was strengthened by an extension of the study horizon.

Outcomes and Causal Inference in International Comparative Assessments

P. Sancassani, L. Wößmann, M. Piopiunik, funded by the European Commission Horizon 2020 framework, Marie Skłodowska-Curie European Training Network, August 2018 to July 2021.

The European Training Network investigates how educational policies influence educational outcomes worldwide. One of the most salient findings in the field of education is that there are huge national differences in student achievement in international comparative studies. The large gap between the highest-perform-

ing countries (most of which are in East Asia) and many European countries corresponds to a difference in attainment of roughly two years of schooling. Although this finding has been replicated in several studies, the reasons for and consequences of such differences are not well understood to date. The early-stage researcher project in this network conducted at the ifo Institute focuses on reforms of teacher professionalisation and accountability. The objective of this project is to expand knowledge of the ways in which policy-relevant schooling inputs affect the efficiency and equity of student outcomes. To this end, the latest microeconomic evaluation methods are applied to international student assessment data.

How Does Reducing the Intensity of Tracking Affect Student Achievement and Equity? Evidence from German State Reforms

L. Simon, L. Wößmann, funded by the German Research Foundation (DFG) in the DFG Priority Programme 1646 “Education as a Lifelong Process: Analysing Data of the National Educational Panel Study (NEPS)”, July 2018 to July 2020.

This project aims to identify the effect of a reduction in the intensity of tracking on the level and equity of student outcomes in German school systems. It will investigate de-tracking reforms that were implemented in several German states. To identify the reform effects, the project applies a difference-in-differences approach to data of the 5th-grade and 9th-grade cohorts of the National Education Panel Study (NEPS). It will analyse effects on students’ achievement scores, attainment of 10th grade, secondary-school degree, and grade repetition. It will also study heterogeneous effects by students’ socioeconomic background. The rich available NEPS data enable us to study several possible channels of reform effects.

Empirical Studies in the Economics of Education

L. Wößmann, various ongoing research projects, recent publications, among others, in *Review of Economics and Statistics* 100(3), 2018; *Journal of Public Economics* 167, 2018; *Oxford Bulletin of Economics and Statistics* 80(1), 2018; *European Journal of Political Economy* 53, 2018; *IZA World of Labor* 2018; NBER Working Paper No. 24836, 2018; CESifo Working Paper No. 6858, 2018; No. 7000, 2018; No. 7097, 2018; No. 7192, 2018; No. 7222, 2018; *Research Handbook on Sociology of Education*, forthcoming; *Advances in the Economics of Religion*, forthcoming;

National differences in attainment poorly understood

Investigating de-tracking reforms

chapters in collected volumes; reports of the Aktionsrat Bildung and the Academic Advisory Council of the Federal Ministry of Economics and Energy, as well as contributions in several daily and weekly newspapers.

Numerous ongoing projects deal with different topics in the economics of education. Several projects use microeconomic techniques to analyse the extensive micro datasets of various international student achievement tests such as PISA and TIMSS. The goal is to determine what lessons can be drawn from international student tests for educational policies aimed at efficiency and equity. Current studies investigate, among other things, the effects of external exit exams, of different forms of student testing, and of computer use in the classroom. One report focuses on the role of education for digital sovereignty.

Several ongoing studies investigate the impact of information provision on the education policy preferences of the population. The topics covered include the level of education spending, education policies aimed at increasing equality of opportunity, and aspiration for higher education. A methodological study investigates whether online surveys can represent the entire population.

A new study analyses the role of productivity signals in the labour market using an experiment with CVs among human-resource managers. Another study investigates how the regional concentration of migrants affects language proficiency and educational degrees of migrant children. A historical research project analyses the extent to which social cohesion and religious beliefs can account for the effect of Protestantism on suicide.

Human Capital Production and Migration

M. Piopiunik, ongoing postdoctoral research project, publication of first results in, among others *Journal of Labor Economics*, forthcoming; *Journal of Human Resources*, forthcoming; *Journal of Human Resources* 53(3), 2018; *European Economic Review* 92, 2017; *Economics Letters* 139, 2016; *Economics of Education Review* 42, 2014; *Scandinavian Journal of Economics* 116(3), 2014; *European Journal of Political Economy* 31(9), 2013; NBER Working Paper No. 21393, 2017; CESifo Working Paper No. 6832, 2017; No. 6858, 2018; No. 7097, 2018.

One focus of this research project is the application of microeconomic evaluation methods to policy-relevant questions in the areas of education and la-

bour economics. One study shows that differences in the cognitive skills of teachers are an important determinant of international differences in student performance. Another study analyses the importance of teachers' subject knowledge for student performance in several countries in Sub-Saharan Africa. Another project uses administrative micro data from the US state of Florida to show that teachers who entered the profession during a recession are considerably more effective in raising their students' test scores, suggesting that the relative economic attractiveness of a teaching job plays an important role in bringing effective teachers into the profession. Another project uses a randomised choice experiment among HR managers in Germany to investigate which skill signals are effective when entering the labour market.

Another focus of the project is on migration issues. One study investigates whether a high concentration of immigrants in a region hampers the integration chances of the migrants' children. The results indicate that children growing up in regions with high co-ethnic concentration have lower host-country language skills and tend to achieve lower educational degrees. Another project, using a survey experiment among university students, investigates whether the attitudes of Germans towards refugees depend on the perceived education level of the refugees. A further study investigates whether the impact of immigration on crime depends on regional labour market conditions.

The Effects of Information Provision on Policy Preferences – Evidence from Survey Experiments

P. Lergepöcher, ongoing postdoctoral research project, publication of first results in, among others *Journal of Public Economics* 167, 2018; *European Journal of Political Economy* 53, 2018; *European Economic Review* 106, 2018; *Economics Letters* 152, 2017; *European Economic Review* 90, 2016; *Journal of Economic Behavior and Organization* 115, 2015; *Journal of Economic Psychology* 46, 2015; *Journal of the Economics Science Association* 1(2), 2015; *Proceedings of the National Academy of Sciences* 111(19), 2014; CESifo Working Paper No. 5938, 2016; No. 6192, 2016; No. 6602, 2017; No. 6832, 2017; No. 7000, 2018; No. 7192, 2018; No. 7222, 2018, No. 7396, 2018.

Empirical research has produced many insights on how education policies could be altered to improve student outcomes. But political actors are fre-

quently reluctant to carry out reforms supported by high-quality research. One important reason for this discrepancy between evidence and action could be that political actors are responsive to the opinions of voters and of well-organised interest groups, which may diverge from what is in the public interest more generally. This postdoctoral research project empirically analyses the determinants of public support for education policies. Public opinion is studied by means of representative survey experiments with a particular focus on interest groups and the effects of information provision on public preferences. The individual topics analysed include educational spending, tuition fees, educational inequality, educational aspirations, political party preferences and gender norms.

Econometric Evaluations of Education Reforms in Germany

L. Zierow, ongoing postdoctoral research project, publication of first results in *Labour Economics*, forthcoming; IZA Discussion Paper 11732, 2018.

This postdoctoral research project aims at estimating the causal effects of several major educational reforms of German states over the last decades on student performance, students' later labour market outcomes and the equity among students of different backgrounds. Its results aim to shed more light on how to design an efficient and equitable education system. The methodological framework takes advantage of the different timing of implementing the reforms across states, but also employs variation of reform implementation across municipalities within states. The difference-in-differences analyses are conducted using large administrative datasets (e.g. the German Microcensus), as well as rich survey data (e.g. NEPS). In 2018, a study was completed on the effects of the expansion of full-day kindergarten in Germany on child development. Using unique administrative data on the universe of kindergartens and school entrance examination data, the study finds that full-day child care has a positive effect on the school readiness of immigrant children. There is, however, also a negative effect on the socio-emotional well-being of children of almost all subgroups. Another study investigates reforms of the perspectives of high-track school dropouts.

An Econometric Analysis of the Role of Individualism in Cognitive Skills Development

S. Resnjanskij, ongoing postdoctoral research project.

Using data from an international adult skills assessment (PIAAC), the project investigates the role of individualism as one main cultural dimension in skill development. Individualism has recently been linked to economic growth, but little is known about its implications for human capital investments at the individual level. The analysis is based on 7,500 individuals from 69 countries of origin. To investigate the relationship between individualism and adult skills, the project looks at skill differences between migrants from different cultural backgrounds within destination countries, eliminating cross-country differences in educational and labour market institutions. Previous research suggests that culture is persistent and migrants take their original cultural toolkit with them when they relocate. Individualism is measured at the country level using the Hofstede index. The results indicate that a one-standard-deviation increase in individualism is associated with an increase in numeracy skills by 0.25 standard deviations.

Individualism associated with better numeracy

The Role of Human Capital in Reforms of Policy-Making

L. Mergele, ongoing postdoctoral research project, publication of first results in *International Tax and Public Finance* 24(4), 2017; Berlin Doctoral Program in Economics and Management Science (BDPEMS) Working Paper 2017-02, 2017.

Political reforms may shift policy-making in two dimensions. First, the authority for policy-making may change between higher and lower levels of government (decentralisation). Second, the government may transfer responsibility for certain domains to public-sector agents (privatisation). This postdoctoral research project examines how the human capital of the individuals affected by these reforms shapes the outcomes of changes in policy-making. Policy changes studied include the decentralisation of public employment services in Germany and the privatisation policies in East Germany following the fall of the Berlin Wall. The project combines large-scale micro data and empirical microeconomic tools to derive its conclusions. Preliminary results suggest that low-qualified job seekers are more likely to find employment once local governments assume responsibility for providing public employment services.

Decentralising public employment services

Microeconomic Analyses on Determinants of Individual Labour Market Outcomes

L. Simon, ongoing doctoral project, publication of first results in CESifo Working Paper No. 6832, 2017; No. 6858, 2018; IZA Discussion Paper 11857, 2018; ifo Working Paper No. 281, 2018.

This doctoral project analyses the impact of education and other determinants on labour market outcomes using microeconomic methods. The first paper uses a randomised field experiment among German human-resource managers to evaluate which skill signals are valued by employers when considering the CVs of applicants who enter the labour market. Its results indicate that signals in all three studied domains – cognitive skills, social skills, and maturity – affect the probability of being invited for a job interview. Grade-point averages and social skills prove relevant for both genders and for both high-school and college graduates. The relevance of other signals differs in terms of credibility, relevance, and expectedness by gender and education level. Females are particularly rewarded for IT and language skills and males for maturity.

Females rewarded for IT skills; males for maturity

A second project analyses the impact of beliefs about refugees' education levels on natives' general attitudes towards refugees. In a survey experiment among 5,000 university students, respondents' beliefs are shifted by providing randomised differing information about the education level of refugees. Its results show that shifting beliefs towards the better education of refugees increases concerns about labour market competition among high-skilled natives, but does not affect general attitudes.

A further project analyses the effect of a labour market deregulation on the demand and supply side of the labour market. The deregulation was an amendment to the Trade and Crafts code of Germany regarding the requirement to become self-employed craftsmen. Using individual social security data, firm-level data and micro census data, the project sheds light on the impact of the reform. Results show that while the reform drastically increased the number of businesses in deregulated craft occupations, the effect on earnings and employment for incumbent workers was slightly negative. The reform also failed to increase overall employment in the crafts sector.

Deregulation increases number of businesses but not employment

The final project analyses the impact of regional structural change caused by exposure to imports from China

and Eastern Europe on the vocational occupation choices of adolescents. Manufacturing jobs are skill-specific, while service jobs are more general, implying that they teach transferable skills that can more easily be applied to new jobs or technologies. The analysis shows that despite decreasing employment in manufacturing in their region, adolescents choose more skill-specific occupations in manufacturing. This has negative consequences for their subsequent labour market outcomes.

Microeconomic Analysis of the Relationship between Education, Individual Skills and Labour Market Success using PIAAC, PIAAC-L and NEPS

F. Hampf, ongoing doctoral project, publication of first results in *CESifo Economic Studies* 63(3), 2017.

The aim of this doctoral project is to gain a better understanding of the interrelation between skills and labour market outcomes. The first part analyses data from the PIAAC Survey of Adult Skills ("PISA for adults") to compare employment probabilities over the working-life cycle for individuals with vocational and general education. An initial employment advantage of vocational education relative to general education turns into a disadvantage later in life. A second project also studies the effect of business cycles on an individual's educational decision at the time when a person graduates from high school. By attending college, individuals can evade negative labour market conditions during economic hardship and accumulate cognitive skills relevant on the labour market. The third project studies the contribution of skills to explaining higher wages for college graduates. Among others, one approach exploits exogenous variation in the probability of university enrollment due to the distance of a high-school graduate's home town to the nearest university. The last project studies the effect of changes in the length of schooling on skills accumulation for basic-track students in Germany. To this end, two German reforms – the compulsory schooling reform and a short school year in the 1960s – are analysed in a difference-in-differences framework using PIAAC-L and NEPS data.

Conditions and Consequences of Education around the World – Microeconomic Analyses

A. Bergbauer, ongoing doctoral project.

The dissertation topic spans from generating human capital to its productive use in the economy. The first

two papers investigate institutional frameworks and exploit reforms thereof. The first paper examines the influence of differential uses of student tests on student learning. Using PISA data, results indicate that tests for external use increase student achievement, while tests for internal use do not. This is consistent with different strengths of incentives set to different stakeholders, as outlined by a simple theoretical model of a tree of principal-agent problems. The second paper analyses the effect of EU accession of Eastern European countries on student achievement. It seems that political, economic, and social EU integration has enhanced student learning. This positive link between political regimes and student learning seems to work through the parents' work situation. The third paper regards the influence of education – measured by skills and attendance – on economic activity. Building on subnational data in Sub-Saharan Africa, a positive relation between skills and development is confirmed.

The Political Feasibility of Educational Decisions

E. Grewenig, ongoing doctoral project.

The doctoral project deals with the political feasibility of educational and labour market decisions, as well as the evaluation of educational reforms in Germany. A first research project examines whether and how positions of the different political parties affect the opinions of the German population towards specific educational-reform proposals. A second research project methodologically examines how the beliefs of the German population can be appropriately illustrated. Particularly, it analyses the impact of a classic belief elicitation method frequently used by experimental economists, providing monetary incentives, on voters' response behaviour. The third project investigates the impact of so-called gender identity norms, such as the norm that mothers should reduce their labour supply when their children are young, on the intended labour market participation of adolescents in Germany. A fourth research project studies a German educational reform concerning students' transition from primary school into secondary schools. Before the actual transition is made, each student obtains a recommendation from her primary school teacher as to which track the teacher thinks the child should pursue. The aim of the project is to analyse the impact of binding teacher recommendations on the percentage of students attending high-track schools and on student achievement.

Microeconomic Analyses of School Reforms

B. Arold, ongoing doctoral project.

The dissertation aims to analyse the effects of school curriculum reforms on long-term attitudes and the life decisions of students applying quasi-experimental methods. The first research project looks at the effects of the abolition of compulsory religious education in schools across German states by applying a panel-data approach using NEPS data. The main focus is the extent to which such reforms affect religiosity, religious affiliation and personal prayer. In addition, other outcomes such as attitudes towards gender equity are analysed. The second research project focuses on the topic of evolution in US school curricula. The goal is to understand whether the omission of evolution in school curricula affects long-term attitudes on evolution and subsequent life decisions such as the choice of major at university. A third research project aims to evaluate the extent to which educational success is determined by genetic endowments and how educational institutions can mediate genetic differences.

How changes in curriculum affect life decisions

ifo Center for Industrial Organisation and New Technologies

Investigating the effect of digitalisation on society

Disruptive innovation processes, digital transformation, and regulatory and institutional responses to them are often controversially discussed in public, in the media and the policy debate without presenting “hard evidence” underlying the arguments. The research programme of the ifo Center for Industrial Organisation and New Technologies explores how policies can foster competitiveness and innovation, and thus promote sustainable economic prosperity in this challenging environment. Moreover, the Center empirically investigates how transformative developments such as digitalisation and innovation affect society and how policy can steer them in a direction that benefits individuals and firms alike in a social market economy. The Center helps to shed light on these questions by interrelating applied economic research with industry expertise, diverse data sources, and modern methods of causal inference and policy evaluation. The Center’s unique organisational profile enables its applied microeconomists, industry experts and data specialists from the LMU-ifo Economics & Business Data Center (EBDC) to collaboratively produce cutting-edge analysis that is of high value to academics, practitioners and policymakers alike. This internal structure is further corroborated by the Center’s strong ties to Munich’s growing group of researchers in innovation economics, to industry partners and the broader (inter-)national research community, especially the CESifo Research Network. The Center’s research activities comprise the following three areas, which are closely intertwined and interrelated:

COMPETITIVENESS, INSTITUTIONS AND REGULATION

Many markets have industry-specific features and regulations that need to be considered in the assessment of sectoral competitiveness, productivity and overall welfare. Through its long-term qualitative industry monitoring (e.g. “Branchen special”, EUROCONSTRUCT and various studies on trade fairs), the Center has built up this expertise, which it uses to reveal and evaluate measures for strengthening competitiveness and the effects of regulatory changes. The Center investigates the consequences for firms and industries, individuals and society in general. In this context, two of the Center’s doctoral students study if and how broadband internet bandwidths should be taken into account when competition authorities define broadband internet markets and decide how to regulate them.

Consequences of regulatory change

INNOVATIONS

The Center’s research covers a broad range of the determinants and effects of innovation and entrepreneurship, and emphasises the policy-relevant conclusions that can be drawn. The Center is particularly well-positioned to swiftly transfer these insights to relevant stakeholders in academia, industry and politics by publishing a variety of articles addressing at different audiences, through its active role in the policy debate (e.g. through regular participation at “Leibniz im Bundestag” (Leibniz in Parliament)), its contact to trade associations, and through the new “Framework Agreement on Conducting Economics Studies” with the Chamber of Commerce and Industry for Munich and Upper Bavaria. This more applied work in turn inspires new research projects/questions where the acquired institutional knowledge is employed to find empirical answers. Examples of determinants of innovation that have been analysed by the Center’s economists include competition, R&D subsidies, regional policy, migration, and intellectual-property rights.

DIGITAL INFRASTRUCTURE AND THE SOCIO-ECONOMIC IMPACT OF DIGITAL TRANSFORMATION

Digitalisation is changing the world at an ever-increasing pace. It has fundamentally altered how individuals behave, how production and business processes are organised, and how market participants interact. At the same time, these processes and their inherent complexity are presenting new challenges to researchers, practitioners and policymakers. This research area therefore tries to shed light on the socioeconomic impact of digitalisation using rigorous empirical analysis. In two studies for the Chamber of Commerce, for instance, the Center analysed the digital problem-solving skills of the workforce and the effects of digitalisation on the labour market. Additionally, the Center focuses on the question of which industry, innovation and digital infrastructure policies, and what kind of institutional framework can help firms and individuals to harness the potential of the digital transformation. In this context, the Center is currently evaluating the “Next Generation Access” programme, Germany’s multi-billion-euro public investment programme for the comprehensive diffusion of high-velocity broadband infrastructure, on behalf of the Federal Ministry of Transport and Digital Infrastructure.

Projects Completed in 2018

ifo Industry Colloquium 2018

P. Brandt, L. Dorffmeister, O. Falck, S. Rumscheidt, J. Schricker, K. Wohlrabe, A. Wölfl in cooperation with the Chamber of Commerce and Industry for Munich and Upper Bavaria, supported by the Bavarian Ministry of Economic Affairs, Regional Development and Energy, report available in *ifo Schnelldienst* 72(1), 2019.

This year's ifo Industry Colloquium took place on 7 November, 2018, with around 200 representatives from business and politics participating in the event. After a welcome speech by Eberhard Sasse, President of the Chamber of Commerce and Industry for Munich and Upper Bavaria, a welcome address was held by Bavarian Minister of Economic Affairs Franz Joseph Pschierer. Clemens Fuest, President of the ifo Institute, gave a presentation on: "The German Economy: Current economic climate and need for economic policy".

Two sets of parallel sessions on the industry and commerce sectors and on the construction and services sectors followed. In each session, the respective sector analysis and forecasts were presented by ifo industry experts, followed by a discussion of major industry-related structural changes.

Jens Südekum of Duesseldorf Institute for Competition Economics (DICE) closed the ifo Industry Colloquium 2018 with his talk on: "Effects of automation on the labour market".



ifo Industry Colloquium

The following speakers participated in the forums:

Forum 1 – Industry:

Chair: H. Schultz, ifo Institute; introduction: W. Wohlrabe, ifo Institute; experts: O. Falck, ifo Institute; H. J. Langer, EOS GROUP; G. Müller, The Association of German Engineers (VDI)/TU München.

Forum 2 – Commerce:

Chair: W. Fischer, CityPartner München e.V.; introduction: S. Rumscheidt, ifo Institute; experts: R. Meyer, Meyer & Meyer Group, CityWOW!; F. Gallus, otto.de; S. Rumscheidt, ifo Institute.

Forum 3 – Construction:

Chair: J. Wallner, Bavarian Building Industry Association; introduction: L. Dorffmeister, ifo Institute; experts: R. Rimpler, The Association of German craftsmanship; P. Racky, University of Kassel; L. Dorffmeister, ifo Institute.

Forum 4 – Services:

Chair: R. Obermeier, Chamber of Commerce and Industry for Munich and Upper Bavaria; introduction: P. Brandt, ifo Institute; experts: Anita Wölfl, ifo Institute; G. Felbermayr, ifo Institute; I. Pohl & J. Ullerich, NTT DATA Germany.

The next ifo Industry Colloquium will take place on 6 November, 2019.



Prof. Clemens Fuest, President of the ifo Institute



Prof. Dr. Oliver Falck, ifo Institute

Introduction of a Tax Break for Research and Development

O. Falck, T. Lohse for the Chamber of Commerce and Industry for Munich and Upper Bavaria, October 2017 to April 2018, publication in *IHK Impulse für die Wirtschaftspolitik*, 2018.

The study was conducted within the framework agreement with the Chamber of Commerce and Industry for Munich and Upper Bavaria. The first part of this study reviews the economic literature on the implications of tax relief for research and development (R&D). The literature on the effectiveness of R&D tax relief in OECD countries shows that these schemes increase private R&D expenditure and are likely particularly beneficial for small and medium-sized firms, as well as start-ups. To date, however, the literature does not provide robust evidence that R&D tax relief also increases employment and productivity. From an Upper Bavarian perspective, the second part of the study evaluates the potential benefits and problems associated with R&D tax relief models that were recently discussed in Germany.

Impact of Digitalisation on the Labour Market

N. Czernich, T. Fackler, O. Falck, A. Fichtl for the Chamber of Commerce and Industry for Munich and Upper Bavaria, October 2017 to September 2018, publication *IHK Impulse für die Wirtschaftspolitik*, 2018.

The study was conducted within the framework agreement with the Chamber of Commerce and Industry for Munich and Upper Bavaria. It examines the impact of digitalisation – including the increasing use of informa-

tion and communication technology in the value-added process – in the labour market. The study is divided into three parts.

The first part presents the state of the art of empirical economic research on the current effects and prognoses of future labour market effects of digitalisation. There has been clear evidence of a digitalisation-induced labour market polarisation in recent decades in the US, as well as in Europe and Germany. Accordingly, relative winners are employees with low and high skill levels, while those with intermediate skill levels often perform easily automatable tasks and lose jobs relative to the other groups. Overall, digitalisation has led to shifts in the labour market, but not to overall job losses. Macroeconomic models, which take into account not only the substitution effects of automation, but also the jobs added as a result of technological change, conclude unchanged or even increased employment.

The second part adds its own empirical analyses of the long-term development of employment and wages by occupation in Germany and Bavaria. These confirm existing findings that overall employment has not changed dramatically, but there are structural shifts. In the period from 1999 to 2016 nationwide, the so-called routine occupations, i.e. occupations that contain many clearly-defined tasks that are easier to automate, have decreased by a total of 4.2%, while non-routine occupations have grown by 7.3% (Fig. 3). In Bavaria, where employment growth was higher overall, employment in non-routine occupations has risen by 22.5%, compared to 5.2% in routine occupations (Fig. 4). Within Bavaria, there are differences in the structure and the development of employment. Employment in Bavaria overall grew by 0.2% from 2000 to 2010, while in Upper Bavaria, where the proportion of routine occupations is relatively low, employment grew significantly more by 3.1%.

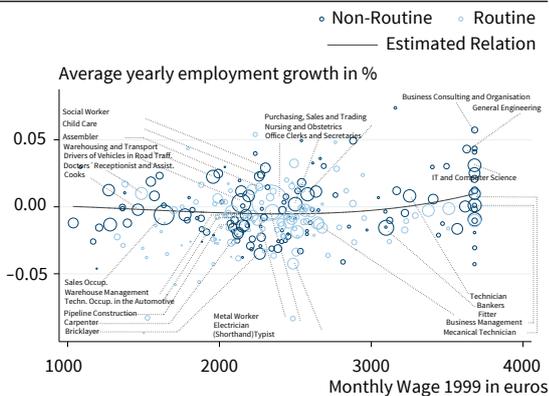
These past trends are extrapolated in the next step and projected into the future until 2030. Projected total employment is not expected to change much for Germany for 2030 either (between -4.8% and 5.5%, depending on the model), while the projections for Bavaria are more positive and mostly show employment growth (depending on the model between 1.6% and 13.5%). However, the positive development of employment may not hide the fact that significant structural shifts will continue across occupations.

The third part derives policy implications from previous findings and the empirical analysis. Policies must be designed to optimally support workers in the process of adapting to digitalisation. The promotion of digital skills at all levels of the education system and lifelong learning in working life should be prioritised. Moreover, job creation in new digital business models should not be hindered by over-regulation and a fair competitive environment for traditional and digital business models should be created.

This study was conducted within the framework agreement with the Chamber of Commerce and Industry for Munich and Upper Bavaria. It aims to thoroughly evaluate the digital skills of employees, especially among young professionals, in a national and international comparison, and to find out which of them, in terms of these skills, starts in an increasingly digital working environment under good or bad preconditions. The analysis employs data from PIAAC (Programme for the International Assessment of Adult Competencies) that includes measured digital skills of adults in a number of OECD countries.

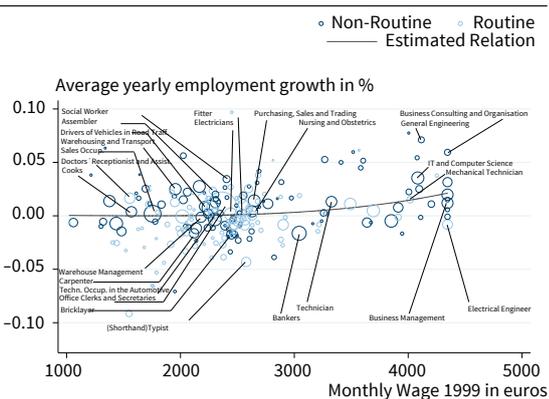
Digital skills in young professionals

Job Polarisation in Germany



Source: Calculations by the ifo Institute. © ifo Institute

Job Polarisation in Bavaria



Source: Calculations by the ifo Institute. © ifo Institute

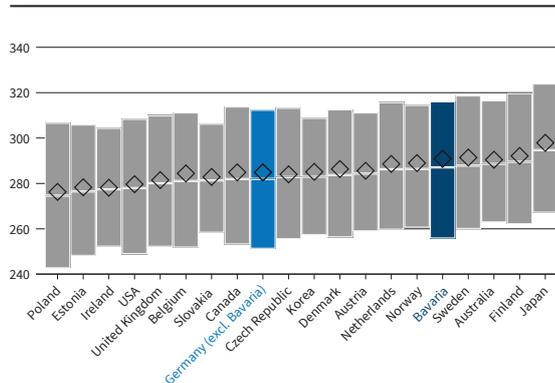
The results show that Bavaria and Germany can keep up by international comparison. Compared to other countries participating in PIAAC, the digital skills of the German workforce are similar to the international average; however, Bavaria performs better than other German states. Restricting the sample to young professionals, the results are similar. However, further analyses reveal strong heterogeneities in digital skills in terms of education and socioeconomic background characteristics. Furthermore, digital skills are strongly correlated with occupations and sectors. In some occupations (e.g., service technicians, craftsmen, and office workers), only the top 25% of young professionals in Germany are as digitally skilled as the average performers in top-performing countries. Based on these differences and results, two main policy implications are derived: that the education system should strengthen the development of digital skills and foster lifelong learning and on-the-job training.

Lifelong learning and on-the-job training

Digital Problem-Solving Skills of the Workforce and Career Entrants – Bavaria by National and International Comparison

A. Heimisch, F. Hampf for the Chamber of Commerce and Industry for Munich and Upper Bavaria, December 2017 to September 2018, publication in *IHK Impulse für die Wirtschaftspolitik*, 2018.

Digital Skills of German and Bavarian Workforce



Source: Calculations by the ifo Institute. © ifo Institute

Identifying clusters

Representation of the (Upper) Bavarian Economy based on Clusters

O. Falck, M. Ebnet, T. Lohse for the Chamber of Commerce and Industry for Munich and Upper Bavaria, May 2018 to July 2018, publication in *IHK Impulse für die Wirtschaftspolitik*, 2018.

The study was conducted within the framework agreement with the Chamber of Commerce and Industry for Munich and Upper Bavaria. Using empirical cluster methods, the objective of this study was to identify groups among sectors of the German and (Upper) Bavarian economies that provide comprehensive representations of their distinctive linkages, but do not (have to) rely on the restrictive classifications of the official statistics. Performing two different cluster analyses, the authors rely on information about job changes obtained from the Institute for Employment Research, as well as Input-Output Tables. The data-driven cluster analyses suggest that it is plausible to divide the Upper Bavarian economy into 13 (job changes) or 9 (Input-Output Tables, see Figure 1) clusters, respectively. As both methods lead to the formation of relatively large and mixed clusters, this study highlights that the Upper Bavarian economy is highly integrated.

Building-Equipment Sector in Germany and Selected European Countries

M. Kocijan for the Messe Frankfurt Exhibition, the German Sanitary Industry Association, the Federation of German Heating Industry and the VdZ – Forum für Energieeffizienz in der Gebäudetechnik, May 2017 to July 2018.

International comparison

This project analyses developments in the German building-equipment sector. To this end, key market indicators such as number of enterprises, turnover, employees, and investments are collected. Furthermore, key market indicators of the German building equipment sector are roughly compared with corresponding data from Belgium, Denmark, France, the United Kingdom, Italy, the Netherlands, Austria, Spain, and Switzerland. A methodological report describes, among other things, the process of identifying and delimiting the sector and its characteristics.

The Economic Impact of the Düsseldorf Trade Fairs and Events

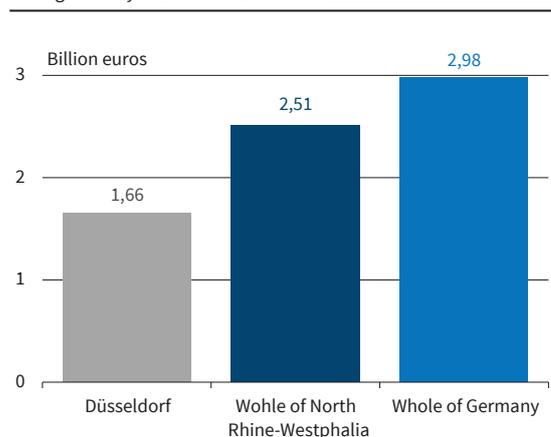
H. Penzkofer for the Fair Düsseldorf GmbH, January 2016 to August 2018.

Trade fairs, conferences, conventions and other events have a major economic importance for Düsseldorf. In an average year the customers of Messe Düsseldorf and its subsidiary spend around one billion euros on events in Düsseldorf. If all of the effects that are generated indirectly are included, event-induced revenues amount to 1.66 billion euros. This purchasing power provides job security for nearly 16,700 people in Düsseldorf. Around 40% of the employees are employed in the hotel and catering industries. Another 30% of jobs are in the craft sector and in event-related services. In addition, the city of Düsseldorf has received 36.3 million euros in tax revenues from trade fairs and other events.

Compared to the last study from 2008, all economic effects (purchasing power, employment, tax revenues) have increased for Düsseldorf. The increase is largely due to the international attractiveness of Düsseldorf as a trade-fair venue. International trade visitors stay in Düsseldorf longer than national ones. As a result, the hotel industry benefits greatly from the business of Messe Düsseldorf and its subsidiary. On average, 32% of all annual stays in Düsseldorf are generated by different events at the Düsseldorf Exhibition Centre.

Purchasing Power Effects

Average event year of Messe Düsseldorf



Source: Calculations of the ifo Institute.

© ifo Institute

Current Projects

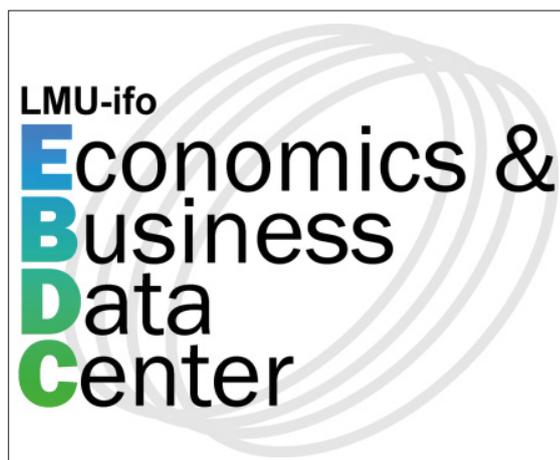
The LMU-ifo Economics & Business Data Center (EBDC)

O. Falck, H. Mittelmeier, V. Reich, S. Wichert, S. Yang.

The now enlarged EBDC team has continued its efforts to establish new research relationships and foster existing ones through 2018 and is very happy to report progress.

Starting 2018, the EBDC team was very glad to welcome Valentin Reich as an old and new member. After several years of very conscientious work as a student assistant at the EBDC during his Master's degree in economics at the LMU, he is continuing his scientific career as a specialist at the ifo Institute. With his longstanding expertise in the methodology of the ifo company surveys, he supports the ongoing research project to link the ifo company data sets with other external data sources, internet and geodata ("Record linkage" (RL)) using new statistical methods like machine learning.

In October 2018, in order to exchange expertise and methodological knowledge in this field, the EBDC, together with Bundesbank's Research Data Center (RDSC), organised an expert workshop on the "Record Linkage of Company Data: Practical Experiences" at the ifo Institute, which was a great success. In addition to ifo/EBDC and RDSC members, representatives of all relevant company data holders and RL experts in Germany participated (ZEW, IAB, German Record Linkage Center, Federal Statistical Office). After a very productive exchange, the participants agreed to continue this format and initiated the first steps towards a joint research data project.



The workshop series with the Bavarian State Office for Statistics (BSOS) also continued in November 2018 with another joint workshop at ifo, this time focusing on "Regional Prices". In order to further intensify the exchange between BSOS and the ifo Institute in the area of "regional economics" and to make better use of potential synergies, a research cooperation has been established here as well.

Furthermore, the EBDC has put considerable efforts into the implementation of consistent research data management procedures and good scientific practices in general at ifo and LMU. The EBDC is now an institutional member of the interdisciplinary "LMU Open Science Center (OSC)", which aims to strengthen scientific integrity in the academic process by promoting transparency and reproducibility, and teaching the necessary expertise. As part of the infrastructure project of the DFG-funded Collaborative Research Center (CRC) "Rationality & Competition" at the LMU, the EBDC puts this mission into practice by supporting and giving advice to CRC researchers regarding archiving their research data.

Framework Agreement on Conducting Economics Studies

O. Falck, A. Fichtl for the Chamber of Commerce and Industry for Munich and Upper Bavaria, July 2017 to July 2021.

The Chamber of Commerce and Industry for Munich and Upper Bavaria has commissioned the ifo Institute to conduct a major, ongoing project involving independent, science-based economic advisory work. As part of this project the ifo Institute is involved in conducting economic studies (meta-analyses, empirical policy evaluations, execution and evaluation of surveys etc.), the drafting and organisation of economic policy oriented events, as well as a regular exchange of knowledge on economic policy topics. All of ifo's Centers are involved in the project. The ifo Center for Industrial Economics and New Technologies is supervising the project.

Information System "Branchen special"

H. Hofmann, C. Vogel in cross-departmental cooperation with over 20 other ifo industry experts for the DG-Verlag, Wiesbaden, biannual publication in Bundesverband der Deutschen Volksbanken und Raiffeisenbanken (BVR), DG-Verlag, Wiesbaden.

Synergies in regional economics

Strengthening scientific integrity

In-depth sectoral analyses

“Branchen special” reports on the 150 most important sectors covered by Germany’s medium-sized companies. Biannually updated industry reports are published on the following economic sectors: services, agriculture, construction and development, retailing and wholesaling, manufacturing, and skilled crafts and trades. The reports contain in-depth analyses and forecasts of sector structure and the current economic situation in a clear, standardised format. More specifically, the reports offer information on supply and demand structures in the consumer goods and services markets, company size and trends towards concentration. Turnover and production forecasts, as well as capacity utilisation and price development monitoring are conducted to evaluate the economic outlook. The economic condition of each sector is assessed using the results from company comparisons, official statistics and an analysis of trends in prices and costs. An industry rating featured in every report offers key information on current and future trends in turnover and profits in the industry, as well as the intensity of competition in the industry and its vulnerability to economic cycles at a glance.

Updated information system

After many successful years the concept of the information system is now updated. The list of sectors is tightened by the consolidation of related categories. The reports also have a new design. Beginning with January 2019 the reduced number of 54 biannually updated editions still report on 150 key sectors. The consolidation of reports provides a direct confrontation of neighbouring sectors. Tables and figures give deeper insight into the sectors and offer both a cross-sectional and a hierarchical comparison. The biannual shifting focus on relevant subsectors enables more detailed analysis. The reports continue to highlight the company policy options, as well as the market positioning and competitiveness of medium-sized companies in a sector. In this context the reports focus on (industry-specific) institutional changes and how different market participants react to them. Some of these institutional changes are taken up by ifo researchers and become subject to a deeper examination in separate projects. Data from official statistics, as well as from primary and secondary sources, are used as an information base, especially association statistics and the results of surveys conducted by different institutions. The results of the ifo Business Survey are particularly important, as they enable a well-grounded assessment of current and future developments.

A list of all of the reports available and their publication dates can be accessed on the ifo website (www.ce-sifo-group.de/branchenspecial). Individual reports can be obtained from the Volksbanken und Raiffeisenbanken, while subscriptions are available from the DG-Verlag in Wiesbaden.

New layout for “Branchen Special”

Evaluation of the Next Generation Access Programme

T. Fackler, O. Falck, S. Schüller, for the Federal Ministry of Transport and Digital Infrastructure, in cooperation with Ernst & Young and WIK-Consult, June 2017 to June 2021.

Empirical evidence suggests that broadband internet access has positive effects on local growth and employment and accelerates structural change. The German federal government therefore aims to ensure the comprehensive availability of next-generation broadband technologies for all German households. Yet there are areas in which market-driven expansion by private suppliers appears not to be profitable. For such areas, the Next Generation Access Programme is meant to incentivise the private expansion of broadband infra-

structure through complementary state aid. Following European Commission guidelines, the effectiveness of these measures will be evaluated in a rigorous empirical policy evaluation design. In its collaboration with the consortium, the ifo Institute will focus on the statistical analysis of the data.

ICT Sector in the Greater Munich Area

K. Candel-Haug, N. Czernich, O. Falck for the Chamber of Commerce and Industry for Munich and Upper Bavaria, October 2018 to June 2019.

The study will be conducted within the framework agreement with the Chamber of Commerce and Industry for Munich and Upper Bavaria. It analyses the structure and the development of the ICT sector in the Greater Munich Area, using secondary data sources on three indicators, namely employment, firms and revenue in the last five years. The data analysis makes it possible to identify, for example, interesting inter-sector developments and differences between the city of Munich and its metropolitan area, as well as to compare the importance of the ICT sector to all industries in the Greater Munich Area economy. Furthermore, a national and international assessment of the Munich ICT sector will be conducted. Finally, start-up activities in Munich and three other major German cities will be evaluated.

Construction in Germany by Segment

L. Dorffmeister, M. Kocijan, E. Gluch for federal and state ministries, local authorities, research and advisory institutes, companies and associations; ongoing project, work tables (on request) as well as publications in *ifo Schnelldienst* and external publications.

As part of this research and advisory project, values and quantities illustrating German construction activities are forecast on a quarterly basis. These figures are broken down into residential construction, commercial building construction and civil engineering, and public-sector building construction and civil engineering. The forecasts are presented for debate in the construction and housing forecasting group, as well as at the ifo Industry Colloquium (*ifo Branchen-Dialog*). They are also integrated into the Joint Economic Forecast prepared by five major German research institutes, and into the ifo Institute's forecasts. Moreover, they are used for a series of reports in "Branchen special" and as the basis for the German contribution to forecasts of European construction (EUROCONSTRUCT).

Economic Situation and Structure of Europe's Construction Sector (EUROCONSTRUCT network)

L. Dorffmeister, E. Gluch, M. Kocijan for the EC-Partner institutes, the organisers and participants in the EUROCONSTRUCT conferences, as well as recipients of the conference proceedings and for presentations at specialist conferences, publication in *ifo Schnelldienst* 71(2), 2018; 71(13), 2018; as well as in various specialist journals.

The European research and advisory network EUROCONSTRUCT consists of 19 European member institutes (15 from Western Europe and four from Central and Eastern Europe). At conferences held twice a year in different locations, current forecasts for all partner countries – as well as for Europe as a whole – are presented. The forecasts not only feature figures (in euros) differentiated by construction type, but also present the physical variables of construction (number of dwellings). The conferences in 2018 (held in Helsinki in June, and in Paris in November) also looked, among other things, at Smart Cities and their impact on the construction industry, at the reuse of building and components, as well as the urban building megaproject "Greater Paris". One of the main results of the analyses conducted in 2018 was the fact that the construction activities in Europe will continue to grow in the years ahead, but growth will steadily lose momentum. The summer conference 2019 will be held in Rome.

The Economic Impact of the Dortmund Trade Fairs

H. Penzkofer for the Westfalenhallen Dortmund GmbH, January 2017 to November 2019.

The objective of this project is to calculate the direct and indirect purchasing power and income effects, as well as the resulting tax revenues, of the Dortmund trade fairs. The calculations of the direct and indirect effects are derived from an estimation model that primarily uses the individual expenditure of visitors and exhibitors.

The Economic Impact of Trade Fairs in Germany

H. Penzkofer for the Association of the German Trade Fair Industry, August 2017 to July 2019.

Based on surveys conducted for the project among visitors and exhibitors at selected trade fairs, the total number of visitors and exhibitors and their expenditure

are determined. The calculations of the direct and indirect effects are derived from an estimation model that primarily uses the characteristics of the visitors and exhibitors and individual expenditure.

The Trade Fair Index

Business expectations at trade fairs

H. Penzkofer in cooperation with Messe Frankfurt GmbH, January 2017 to May 2019.

The “Messe Index” (Trade Fair Index) describes both the business developments and business expectations of German companies at international consumer and capital-goods trade fairs in Germany. It provides an up-to-date evaluation of the trade fair activities of these companies, as well as the six-month trade fair outlook based on their business expectations. These evaluations are facilitated by the fact that the business climate calculated for the “Messe Index” signals the direction in which the economy is developing very effectively.

Infrastructure Project of the DFG-CRC “Rationality & Competition”

H. Mittelmeier, S. Wichert; January 2017 to December 2020.

Preventing market failure

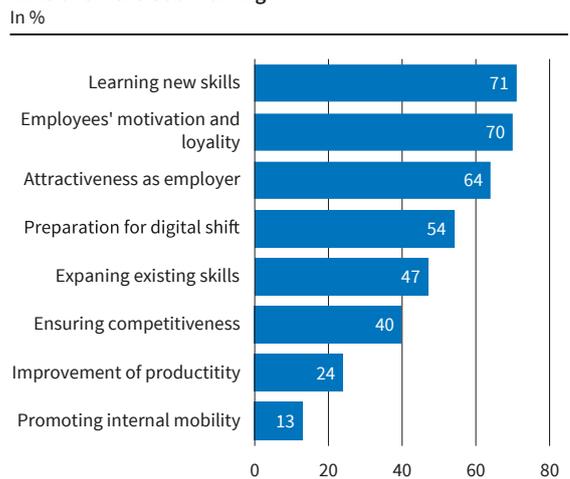
Since January 2017 the EBDC has been part of the infrastructure project of the DFG-funded collaborative research center (CRC) “Rationality & Competition”, which is backed by several research institutions from Munich and Berlin. The members of the CRC analyse individual- and firm-level (ir-)rational decision behaviour in a competitive environment and investigate suitable policy responses in such situations to prevent market failure. The infrastructure project supports and links up the activities of CRC’s empirical research. It coordinates data collection efforts for all CRC members – administratively and methodically – gives recommendations on research data management and provides a secure infrastructure to work with confidential data. The EBDC in particular is responsible for data archiving and data publication to promote replications and secondary studies for the SFB members. To this end, the EBDC has developed an online interface (including a metadata repository) that enables CRC researchers to document and archive their research projects and data collection projects easily and completely through the CRC homepage.

Randstad ifo Personnel Manager Survey

P. Brandt, O. Falck, J. Schricker, K. Wohlrabe for Randstad Deutschland GmbH & Co.KG, ongoing project, which is published on the company’s website and that of the ifo Institute. Furthermore, articles working with this data are released in *ifo Schnelldienst*.

Four times a year the ifo Institute surveys personnel managers in manufacturing, wholesaling and retailing, as well as in the service sector, on the importance of flexibility in personnel placement. The participating managers provide a general assessment of flexibility and an assessment with respect to specific measures (overtime, limited contracts, “mini-jobs”, temporary workers, freelancers, outsourcing, internal transfers, working time accounts). The project aims to provide insights into the role of flexibility measures in business cycles on a long-term basis. A special, changing question deals with current personnel policy. An evaluation of the special questions can be found on the ifo Institute’s website and in *ifo Schnelldienst*. In 2018, special questions were asked on the EU’s new General Data Protection Regulation (GDPR), on-the-job training, Transparent Remuneration Law, as well as on apprentices.

Aims of On-the-Job Training



Source: Randstad ifo Personnel Manager Survey. © ifo Institute

Digital Skills in the Manufacturing Sector

T. Fackler, O. Falck, S. Wichert, ongoing project, in cooperation with LinkedIn.

Digital skills are in great demand in the labour market. While they are often associated with tech companies, they are increasingly required in other sectors. This

joint project with LinkedIn takes advantage of their data, the “Economic Graph”, to investigate whether and, if so, which digital skills are in demand in the manufacturing sector in Germany. Beyond taking stock of the applied and advanced digital skills in different (sub-)industries, occupations and regions, the study will illuminate where digital skills come from (e.g. labour mobility between IT and manufacturing companies, education and degrees) and how they have developed over time.

Economics of Innovation in Telecommunications

A. Heimisch, A. Mazat, V. Lindlacher, ongoing Ph.D. scholarships by Deutsche Telekom AG.

These doctoral projects deal with determinants of innovation in telecommunications and investigate its underlying mechanisms. They also consider the overall economic impact of these innovations. To answer these questions, individual-, regional- and firm-level data are used.

In Alexandra Heimisch’s doctoral project (dissertation defence in July 2018), a first study investigates the returns on specialised skills in information and telecommunication technologies (ICT) (e.g. writing emails or searching for information online) in the labour market. These kinds of skills partly emerge from being exposed to broadband internet (learning by doing). By employing two different instrumental variable approaches, ICT skills can be shown to have a causal, positive effect on wages. One mechanism driving the positive wage returns is the selection of individuals with high ICT skills into occupations with a high abstract task content that pay wage premia. This study is published as CESifo Working Paper No. 5720, 2016. Another study deals with the effects of online job search in the German context.

In the doctoral project of Andreas Mazat (dissertation defence in January 2019), the first paper addresses the effect of high-speed internet availability on entrepreneurs’ decision to start a business, as well as on firm location. An instrumental variables strategy, exploiting the technological peculiarities of the public switched telephone network that influence the employability of DSL, is applied to identify a causal relationship. Initial results indicate that the establishment rate of start-ups increases with high-speed internet availability, especially in the service sector and

knowledge-intensive sectors. Another study addresses the question of whether the increasing popularity of online shopping among the German population leads to a change in the (employment) structure in the traditional stationary retail sector. To this end, municipality-level data on the online shopping affinity of German households is used. The third dissertation project by Andreas Mazat examines the importance of improving broadband internet product quality to the competitiveness of German internet providers. The potential of mobile internet technologies to close gaps in broadband internet coverage across rural areas is also considered.

In a joint study, Alexandra Heimisch and Andreas Mazat, among others, look at a regulatory topic. Although the market for fixed-line telephony is shrinking, the market for fixed-line access is still regulated in some European countries. In these countries, regulatory authorities question whether substitution between mobiles and fixed lines is strong enough for a deregulation. Instead of classically estimating cross-price elasticities, Heimisch, Mazat and their co-authors introduce the new method of estimating a “cross-technological elasticity” between fixed lines and mobile on the basis of unique regional fine-grained data in Austria. To overcome endogeneity concerns in the local availability of mobile infrastructure, they employ an IV strategy that relies on the idea that availability of mobile infrastructure is lower in more rugged areas, as roll-out is costlier. Their initial results indicate a significant negative effect of 3G mobile coverage on the rate of change in fixed-line usage.

The doctoral project of Valentin Lindlacher, who received a scholarship in September 2017, aims to deal with issues regarding market definition, market distinction and evaluations, for example in the context of the rollout of fibre infrastructure. Methodologically, it plans the increased use of techniques from the field of machine learning.

In a joint project, Valentin Lindlacher and Andreas Mazat determine individual willingness to pay for broadband internet services offering different bandwidths. In addition, they calculate own- and cross-price elasticities of demand between internet contracts offering different bandwidth. Based on this analysis, they suggest drawing the boundaries of the market for broadband internet access along bandwidth.

Broadband and mobile internet

Interplay with fixed-line usage

Evaluating place-based innovation policy

Papers in Empirical Innovation and Regional Economics

T. Lohse, ongoing doctoral project.

Conceptually, this dissertation project is located at the intersection of regional and empirical innovation economics. The first part is a joint project with Oliver Falck and Johannes Koenen, which evaluates a place-based innovation policy, the so-called “Innovative Regional Growth Cores” programme. This programme has been central to the economic development strategy of East Germany, but has received little (empirical) attention to date. Considering the case of the German book market, Andreas Mazat, Bastian Stockinger and Tobias Lohse investigate in the second part how the willingness of consumers to shop online affects the stationary retail sector. The third part of this dissertation is concerned with the question of how the availability of very high-speed internet access impacts firm-level investments.

Economic Outcomes and Driving Forces of Innovation: Evidence on Digitalisation and Migration

K. Candel-Haug, ongoing doctoral project.

This dissertation project (dissertation defence in January 2019) focuses on the creation and diffusion of innovation in the context of two of the main challenges currently faced by our societies and economies: digitalisation and migration. Two papers show how digitalisation and the possibilities of new information and communication technologies impact firm organisation and productivity in various ways. The third chapter of the dissertation project analyses the contribution of immigrants from new EU member states to innovativeness in Germany and, unlike results for the US, finds significant positive complementarities.

Enterprises’ Constraints and Strategies

S. Yang, ongoing doctoral project.

This project focuses on manpower constraints and firm performance. By leveraging the EBDC unique datasets that combine financial data and firm surveys, it is possible to observe German firms’ self-reported manpower constraints. The initial results show that constrained firms have higher capacity utilisation, lower inventories, more unsatisfied orders, and want to invest more in capital expenditure. This project proceeds to use German reunification as an exogenous shock to iden-

tify the effect of relaxation in manpower constraints faced by firms in West Germany. There are plans for future research to investigate domestic and exporting firms and their heterogeneous constraints and corresponding performance.

Socioeconomic Impact of Broadband Internet

S. Schüller, ongoing postdoc project, publication as CESifo Working Paper No. 6129, 2016; *Wirtschaftsdienst*, 96(8), 2016.

The ongoing processes of digitalisation in economy and society certainly have important implications, not only for economic growth but also for labour markets and political systems. The diffusion of broadband infrastructures enabling firms and households to access high-speed internet plays a crucial role in this “Digital Revolution”. Two initial projects focus on the causal impact of ADSL2+ broadband availability on voting behaviour and on firm performance, both exploiting a local public broadband infrastructure delivery programme in the Province of Trento, Italy.

Labour Mobility, Incentives, and Innovation

T. Fackler, ongoing postdoc project.

Building on the dissertation projects, which focused on the determinants of innovation, this project extends the scope of research to include both the creation and the consequences of technological progress. More specifically, it explores the role of knowledge workers in the process of innovation, as well as exploring the effects of digitalisation on the labour market. The incentives for firms and individuals play a crucial role in all of these areas. Methodologically, the project takes advantage of the increasing computational power available to researchers, using machine learning tools for its analysis.

The Socioeconomic Effects of the Digital Transformation

S. Wichert, ongoing postdoc project.

Building on a chapter of his completed Ph.D. project (on the effects of broadband internet on health), part of this habilitation project now extends this issue to the study of the socioeconomic effects of digital transformation on individuals, companies, and society as a whole. This includes the analysis and development of institutions and policies that influence, promote or

Digitalisation drives innovation

regulate digital processes with a view to strengthening competition and innovation. In order to tackle this question, it is often necessary to prepare a suitable empirical data basis from various sources. The second part of the habilitation is therefore devoted to the development and application of methods for analysing and linking innovative datasets, in particular the ifo company datasets, with new statistical methods (like machine learning).

ifo Center for Energy, Climate and Resources

The Center's research activities are determined by the main challenges stemming from climate change, the scarcity of natural resources and sustainable energy supply. In accordance with its name, the Center is especially active in research and policy advice on climate and energy policy and the efficient utilisation of resources.

Its activities focus on topics that are relevant in the longer term which are analysed as part of multi-year research projects and, whenever appropriate, in cooperation with researchers from other disciplines and research institutions. These medium-term projects are complemented by selected short-term consulting projects for public and private clients. The Center's research uses both theoretical and numerical methods, as well as empirical approaches, depending on the research question. The results of its research serve as a basis for providing policy makers with in-depth information on the efficiency and effectiveness of climate, energy and environmental policies.

Decarbonising energy systems

In the field of **energy**, the Center is particularly concerned with the transformation of energy systems in the course of their decarbonisation.

The characteristics of energy supply in combination with behavioural, security-of-supply and economic aspects lead to areas of tension in the transformation of energy systems, which are examined under special consideration of policy options on different regional levels. While one focus of this research is the analysis of electricity markets, the effects of policies measures on regional value added and employment are also examined. In this context, an ongoing interdisciplinary project involving local stakeholders analyses, for example, the transformation of energy supply in the Alpine foothills.

National and international energy policy

Since German energy policy must also be seen in the context of European developments, the Center's research also takes the interaction of national and international policies and CO₂ reduction targets on the European level into account. In this analysis, the Center employs a model of the European power market into which renewable energy generation from wind and sun is integrated in a very detailed manner. The model employed is being continuously refined and improved. In the course of a perennial research cooperation with other universities and research institutes, the current focus is on the integration of acceptance and on the flexibilisation of energy demand.

At the centre of research on **climate and resources**, which is naturally closely linked to the research on energy, are the efficiency and effectiveness of climate policies and analyses on the impact of climate and energy policies on the use of exhaustible energy resources.

One focus in this area is on the long-term macroeconomic and sectoral implications of climate policies for economic development, carbon emissions and investment in energy generation technologies. In 2017, the main emphasis was on the effects of uncertainty, strategic behaviour and technology development. The Center cooperated in this research, for example, with researchers from various disciplines and institutions in Germany in a multi-year project on the integrated analysis of green transformations.

The effects of climate policies on the use of fossil fuels are analysed with regard to the effects on extraction paths, strategic incentive and substitution effects, and the estimation of future emissions. The suppliers of energy resources and the analysis of resource- and energy-related investments traditionally have a special significance for the Center. In 2018, research in this area focused increasingly on the problem of stranded assets, analysing, for example, to what extent climate policies lead to wealth losses in various sectors.

Furthermore, in the year under review, the Center supported public and private clients in different consulting projects: in a multi-year project for the German Federal Ministry for Economic Affairs and Energy (BMWi), for example, methods and indicators for improving the monitoring of the bioeconomy are being developed. The Center was also involved in the development of methods for prioritising topics and activities under the 7th Energy Research Programme for the BMWi. The proposals of the Center for the further development of the research programme, which was presented in the year under review, were largely taken into account.

In addition to its research tasks, the Center maintains an internet-based information platform on resource- and energy-related topics. It also contributes to the existing database for the international comparison of economic institutions (DICE) with indicators from the areas of climate change and energy policy. The Center is systematically active in policy advice, for example in the German Advisory Council on Global Change (WBGU) and the Bavarian Climate Council.

Projects Completed in 2018

Trends and Perspectives in Energy Research, Project Part B: Development and Application of Methods for the Prioritisation of Topics and Measures in Energy Research in the Context of Germany's Energy Transition ("Energiewende") (EnFo-2030)

K. Pittel, J. Pfeiffer, C. Weissbart, M. Zimmer, P. Brandt in cooperation with TU Munich, German Aerospace Center e.V., Research Center for Energy Economics e.V., University of Münster, for the German Federal Ministry of Economics and Energy, December 2016 to April 2018.

The energy research programme of the German federal government characterises the guidelines and instruments for public policies to support energy research. The main target of the programme is to successfully realise the various energy- and climate-policy goals of the so-called Energiekonzept and the accompanying fundamental transformation of the energy system in Germany. In October 2018, the seventh edition of the energy research programme was published. As part of a broader process of consultation EnFo-2030 contributed to the revision of the previous sixth edition of the energy research programme together with its complementary partner project "Technologies for the Energiewende".

The task of EnFo-2030 was to develop and use a novel approach for the systematic identification and characterisation of essential issues for the new energy research programme. In contrast to its partner project, which considered a broad range of technologies separately and in great detail, EnFo-2030 particularly addressed systemic issues and challenges from a more aggregate, top-down perspective. It elaborated fundamental changes in the technical, economic, political and social conditions for a successful transformation of the energy system, and evaluated the previous edition of the energy research programme against this background. On this basis, a catalogue of 12 theses was developed, which summarises the central findings and guidelines for the future focus and strategy of publicly funded energy research.

The theses result from a multi-step process of analysis starting from a sectoral analysis, and aggregate and structure the future challenges and need for energy research according to energy supply and energy

demand, and increasingly important cross sectoral topics, as well as the most fundamental channels to decarbonise the energy system in these dimensions. The recommendations generally point out the importance of systemic relationships and challenges for the energy transition and the future design and structure of the energy research programme. This also includes a stronger and more direct consideration and integration of the socioeconomic conditions and drivers required for the successful and effective diffusion of new, innovative energy technologies. In addition to the research topics, EnFo-2030 also derived selected recommendations to adapt formats and structures for the support and public funding of energy research to the identified future challenges and recommendations. Specifically, the project discussed: a) preconditions for so-called integrative energy research, which comprehensively integrates social, economic and technological energy research; b) the specific needs of start-up firms; c) the future role and design of large joint research projects; and d) the role and value of living lab research approaches.

The ifo Institute was supported by Prof. Löschel from the University of Münster and was part of an interdisciplinary project team consisting of the DLR (German Aerospace Center), FfE (Research Center for Energy Economics) and the Technical University of Munich, which led the project. The evaluation of the need for energy research and the discussion of support and funding formats were based on the review of energy market models and scientific literature as well as the expertise of the project advisory board with 14 experts from the manufacturing industry, the energy sector and academia. Additional insights were derived from a workshop at the German Federal Ministry of Economics (BMWi) organised by both projects, EnFo-2030 and "Technologies for the Energiewende", as well as from the results of an online survey among the members of the energy-research networks ("Forschungsnetzwerke Energie"). The online survey was designed, processed and evaluated under the supervision of the ifo Institute by both projects in spring 2017. Throughout the derivation and discussion of the need for future state-funded energy research, the ifo Institute, in cooperation with Prof. Löschel, took an economic perspective and considered societal and systemic aspects. The ifo Institute was lead author of the chapter on cross-sectoral topics. In this context, the potential and risks of the digitalisation for the energy transition, the changes in

Diffusing new energy technology

Energy market models under review

and development of new business models, acceptance issues related to changes in the natural environment, new technologies and behavioural changes, the characteristics and drivers of energy demand behaviour, as well as the regulatory reforms that may be required were discussed.

Integrated Analysis of a Green Transformation (InTrans)

K. Pittel, A. Schmitt, A. Ciesielski in cooperation with the ZEW – Leibniz Centre for European Economic Research Mannheim, University of Munich and the University of Bayreuth for the German Federal Ministry of Education and Research, June 2015 to November 2018.

The reduction of fossil fuel use and the stabilisation of greenhouse gas emissions is an important element of a green transformation. In its contribution to the project, the ifo Center for Energy, Climate and Exhaustible Resources focused on technological change and the provision of environmentally-friendly technologies, which are an important prerequisite for a successful green transformation.

Feasible growth and technology paths were compared with respect to their economic and climate impact, while taking into account different types of uncertainty. The process of technical change and potential path dependencies were at the heart of the analysis. One important goal was to study endogenous technological change and technology paths in the context of transition processes that are inevitable in the course of long-run development. The macroeconomic perspective on long-run growth, investment and technology paths allowed us to draw conclusions about the distribution of welfare gains and losses in an intergenerational context.

A second focus was on the analysis of suitable long-run policies to foster clean technologies. In this context, it was of interest whether, and to what extent, the regulator might be able to create investment incentives by reducing regulatory and political uncertainties.

In one part of the project, the analysis of transition paths was based on the workhorse Integrated Assessment model DICE by William Nordhaus, where we endogenised investments by households into R&D. This approach allows for explicit modelling of the effects of endogenous economic growth on climate change on the one hand and of the effects of climate change on

the incentive to invest into R&D on the other. In order to model uncertainty about possible transition pathways, we developed a Bayesian approach towards the calibration of deterministic models of economic growth. Using this approach, we recalibrated the socioeconomic component of DICE and were able to quantify uncertainty about possible future investment and technology pathways. Based on this approach, we derived optimal policy pathways, including the optimal taxation of greenhouse gas emissions over time and under uncertainty.

Furthermore, we developed a model featuring multiple technologies for producing energy, with a focus on the power sector. Technology paths in this model are interpreted as the evolution of capacities associated with different technologies over time. They are determined by the investment behaviour of households and firms. Compared to similar models used in the literature, our model features a higher degree of aggregation with respect to capacities. For example, different technologies for generating electricity from wind and solar energy are aggregated to one technology. This results in a smaller number of technologies than in other models, which enables us to analyse within-model uncertainty regarding, for example, future technological developments.

Current Projects

Determination of Economic Indicators for Monitoring the Progress of the Bioeconomy

J. Wackerbauer, T. Rave in cooperation with the Leibniz Institute for Bioeconomy (ATB), the Fraunhofer Institute for Systems and Innovation Research ISI at Karlsruhe and the nova-Institute, Hürth, for the German Ministry for Economic Affairs and Energy, April 2016 to March 2019.

This project is one of the three pillars of the German federal government's bioeconomy monitoring. This includes traditional areas like the wood industry or the food industry, as well as new innovative applications for bio-based materials. The objective of this project is to contribute to the development of the scientific basis for long-term monitoring of the bioeconomy. Via continuous monitoring a knowledge base for political action and a public debate about the bioeconomy will be created. To achieve the objectives of the National Pol-

Path dependencies in technological change

Economic growth and climate change

icity Strategy Bioeconomy, indicators will be developed that are based on scientific criteria. Methods of data collection will be established, which make it possible to make all dimensions of the bioeconomy measurable. The progress in the transformation process towards a bioeconomy, but also potential barriers or trade-offs will be visualised to enable decision-makers to draw any necessary consequences.

Ten work packages will be processed until the end of the project:

- Requirements for statistical data and indicators and inventory
- Biomass flows and utilisation of by-products
- Methodological development of a bio-based indicator system under economic aspects with strong links to the NACE classification
- Quantification of cascade and coupling usages
- Innovations, patents, education
- Combination of economic indicators and ecological accounting
- Pilot study for the chemical and plastics industries
- Drivers and restraints in the transition to the bioeconomy
- Further development of the NACE classification
- Project management and workshop

By the end of 2018 extensive results were developed for eight of the ten work packages and documented in five interim reports. Among other things, a pilot study empirically examined the applicability of the developed methods for selected product groups. In a workshop, the developed results were discussed with experts in the field of the bioeconomy.

INOLA – Innovations for a Sustainable Land and Energy Management at the Regional Level

J. Lippelt, A.M. Montoya, K. Pittel, M. v. Schickfus, M. Zimmer in cooperation with A. v. Streit and W. Mauser, University of Munich, W. Mayer, Kempten University of Applied Sciences, the communal civil society “Energiewende Oberland” and utility company partners for the German Federal Ministry of Education and Research, October 2014 to September 2019.

The objective of the INOLA project is the interdisciplinary and transdisciplinary development of system solutions for sustainable land use and energy management of the model region “Energiewende Oberland” (“Oberland Energy Transition”). The Energiewende Oberland region covers three administrative districts south of Munich. The central question of the project is which social and technical innovations are necessary to establish sustainable regional land use jointly with an adequate energy system. Cooperation between municipalities and districts, as well as the reflexive design of the innovation process, are crucial in achieving these objectives. The primary contribution of the project is an innovation concept providing the region with the necessary process knowledge to successfully shape the transition towards a sustainable land use and energy system.

The ifo Institute’s task within INOLA is to determine the economic impact of different scenarios for regional energy and land use systems. An input-output model is used to identify the effects on value added, employment and sectoral output at the regional level, and to determine innovation strategies.

Research Network for the Development of New Methods in Energy System Modelling (4NEMO)

K. Pittel, M. Mier, C. Weissbart in cooperation with DLR, EWI, Research Center Jülich, RWTH Aachen, Technical University Munich, the Universities of Stuttgart and Freiberg and ZEW for the German Federal Ministry for Economic Affairs and Energy, November 2016 to October 2019.

The energy transition’s envisioned goals of increasing the market share of renewable energy and the reduction of greenhouse gas emissions have led to a dynamic transformation of the energy system. Closely connected to the increased share of renewable energy is the advancing regionalisation of the energy system. Both the rising market penetration of intermittent generation technologies and the higher spatial dispersion of production structures and networks call for improvements in the coordination of the energy system and of all players in society. This implies that besides technical feasibility and economic viability, social acceptance becomes an increasingly important aspect in the development of the future energy systems.

The dynamic environment of energy systems is also visible in the variety of existing energy system models,

Cooperation shapes the energy transition

Social acceptance of future energy systems

which are, however, only partly capable of reflecting the aforementioned challenges.

Against this backdrop, the ifo Institute coordinates nine renowned research facilities and institutes of higher education

- to improve the coherence, comparability and transparency of energy models, and
- to improve the integration of economic and social factors and the affiliated uncertainty in energy models.

The project develops integrated scenarios that include a detailed reflection of economic, social and technological conditions. The energy models of project partners are improved through coordinated development, and the general validity of the models is improved by the stronger incorporation of economic and social factors. Accordingly, the project will help increase the validity, comprehensibility, and comparability of policy analyses based on energy models. Future research projects and consulting activities can be better coordinated among the involved institutes through the creation of a common database and the ability to link the models. This will also improve the speed and efficiency of future joint projects.

The research effort comprises five work packages. The ifo Institute is working on work packages 1, 2, 4, and 5 and coordinates the entire research effort. In work package 1, a list of requirements reflecting the changed conditions on energy markets was defined last year. A model analysis was coordinated by the ifo Institute in a sub-package to identify the strengths and weaknesses of a representative group of around 40 energy market models. The goal of work package 2 is that the institutes involved adapt their existing models to the new requirements along four clusters (technology, acceptance, regions and uncertainty). In this context, the ifo Institute analysed the models, as already selected for work package 1, with respect to their ability to answer major energy-policy questions. Within the technology cluster, the ifo Institute developed a framework to implement investments in energy efficiency and short-term demand response in power market models. This makes it possible to quantify the role of energy efficiency in reducing CO₂-emissions.

Furthermore, the model is currently being extended to include the costs related to external effects that are usually neglected like, for example, landscape impacts, which can cause local public opposition towards

renewable energy technologies. At the same time, consistent socio-technological scenarios and a concrete dataset were developed in work packages 3 and 4. In the final work package 5, the established scenarios are used as the basis for a comparative model analysis.

German Advisory Council on Global Change (WBGU)

K. Pittel, J. Pfeiffer for the Alfred-Wegener Institute, Bremerhaven, December 2016 to September 2020.

The German Advisory Council on Global Change (WBGU) is an independent scientific advisory body of the federal government that was set up in 1992 in the run-up to the United Nations conference on environment and development (“Rio Earth Summit”). The principal task of the WBGU is to analyse the global change of the natural environment and its implications for humanity and societies. It also aims to raise the awareness of the broader public and politicians and draw their attention to global environmental and development challenges as early as possible.

With unsustainable production processes and consumption habits, humanity is severely interfering with the natural environment. This is leading to global environmental changes like climate change, the loss of biodiversity, freshwater pollution or soil degradation. At the same time, this global change is increasing the vulnerability of industrialised countries, and particularly of less developed societies, to natural disasters or food crises and diseases. As a result, global change raises considerable distributional and equity concerns and puts global development opportunities at risk.

The advisory council analyses these challenges by pursuing an interdisciplinary approach and assuming a broad notion of sustainability for which the conservation of the natural environment is as characteristic as ensuring societal, economic and political participation and protecting and fostering self-efficacy and cultural diversity. Every two years, the council publishes flagship reports to initiate a knowledge-based societal and political discussion on the challenges of global change.

In the first phase of the current term, which started in December 2016, the council is looking into the potential and challenges of digitalisation for global sustainability. To point out the relevance of digitalisation for sustainable development and to initiate a broader debate over the relationship between digitalisation and sustain-

Increasing validity and comparability of energy policy analyses

Adapting existing models to new requirements

ability, the WBGU published two premises and ten key questions in a working paper in spring 2018. Since then, these questions and premises have been discussed with experts and representatives from academia, politics, the economy and society in various workshops and one conference. The council's flagship report on digitalisation and sustainability will be published next year.

In August 2018, the council published a policy paper on four initiatives for Just & In-Time climate policy to raise public awareness of fundamental fairness issues inherent to climate change and climate policies in the run-up to the 24th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP 24) in Katowice.

All nine members of the advisory council from various scientific disciplines are supported by personal assistants and by the scientific and administrative staff of the secretariat in Berlin. The ifo Institute is represented by Karen Pittel, who was appointed to the WBGU in December 2016, and her assistant Johannes Pfeiffer.

Energy Systems of the Future (ESYS) – Board of Directors and Working Group “Governance for the European Energy Union”

K. Pittel, J. Pfeiffer, M.-T. von Schickfus, A. Schmitt for Acatech – National Academy of Science and Engineering, financed by the German Federal Ministry of Education and Research, February 2013 to February 2020.

The “Energy Systems of the Future“ (ESYS) project conducted by the German Academies Science (acatech – National Academy of Science and Engineering, the German National Academy of Sciences Leopoldina and the Union of the German Academies of Sciences and Humanities) provides scientific advice and impetus to politics and society on how to design and implement a more sustainable energy system. ESYS was launched in 2013.

ESYS, led by acatech, brings together experts from various scientific fields, from industry and institutions and civil society organisations to identify and discuss challenges, opportunities and policy options for the governance of the energy transition and the realisation of its climate and energy-policy goals. Interdisciplinary working groups collaboratively review the most recent insights into topics like sector coupling or raw materials for the energy transition. In the format of so-called *Analyses*, a comprehensive and rather descriptive over-

view of the insights and background information on the respective topics is provided. Policy options are discussed and evaluated in so-called *Position Papers*. The working groups are engaged in a constant and ongoing exchange with representatives of academia, industry, politics and civil society organisations. ESYS chooses the topics of the working groups independently.

Currently, experts from technical and natural sciences, economics, law, and the social sciences participate in working groups on the topics of bioenergy, centralised vs. decentralised energy supply, and the future regulatory design of power markets. Karen Pittel contributed to a fourth working group on “Governance for the European Energy Union”, which presented its analysis and recommendations in December 2018 shortly after the publication of the corresponding EU directive.

ESYS is governed by the Board of Directors to which Karen Pittel was appointed in 2017. The Board of Directors coordinates the working groups and publicly represents the initiative. It is also in close exchange with politics, industry and civil society organisations. The members of the Board of Directors are supported by a personal assistant and the scientific and administrative staff of the ESYS secretariat in Berlin. In May 2018, Johannes Pfeiffer took over the assistant position for Karen Pittel from Marie-Theres von Schickfus und Alex Schmitt.

Fossil Resource Markets and Climate Policy: Stranded Assets, Expectations and the Political Economy of Climate Change (FoReSee)

K. Pittel, N. Jaakkola, A. Schmitt, S. Sen, M. von Schickfus, C. Traeger in cooperation with the German Institute for Economic Research (DIW), Berlin, and Humboldt-University Berlin for the German Federal Ministry of Education and Research, October 2018 to September 2021.

The FoReSee research project analyses the interplay between policies to mitigate global climate change and the behaviour of various participants in financial and fossil fuel markets. Its main objective is to investigate how policies can be designed to overcome the inertia of the energy system and facilitate its transformation without excessive costs to society. FoReSee quantifies the redistribution of rents implied by various proposed climate policy instruments in sectors and countries vulnerable to asset stranding. It tries to understand private actors' responses to current and expected, po-

Regulatory design for tomorrow's power markets

Climate policies and asset stranding

tentially uncertain, climate policies, and considers how climate policy design should take these responses into account. FoReSee places an emphasis on the interplay of actors, policies and information on fossil fuel and financial markets, while taking into account political economy and institutional constraints to effective climate change mitigation. In addition to traditional policy instruments, FoReSee investigates recently discussed supply- and demand-side climate policies and strives to suggest alternative instruments. The combination of empirical, numerical and applied theoretical modelling provides comprehensive guidance on appropriate and feasible policy design.

The team at ifo heads three work packages. In the first work package, it investigates how financial investors and markets respond to new information and signals on climate policy, and which types of information shape investors' expectations of stranding of assets. Moreover, it examines which are relevant signals from policymakers, and how companies react to climate policy risk and uncertainty. In order to answer these questions, the team analyses the effects of policy shocks on stock markets using econometric techniques. For example, in ongoing work, ifo researchers are investigating the effects of carbon tax ballots in the US state of Washington.

A second work package explores how energy sector, special interest groups and climate policy interact at the national and international levels. Climate policy will have a differentiated impact on assets, depending on their pollution intensity. Carbon-intensive fossil fuels, for example, or capital assets used in the burning of these fuels, will be more heavily impacted by carbon pricing. Insofar as these assets are owned by different groups in society, they represent vested interests that manifest themselves in differing political preferences. Using theoretical and calibrated political economy models, ifo researchers analyse how different policy instruments may lead to different political equilibria.

Climate change uncertainty affects investment in clean energy

In its final work package, the ifo team investigates how uncertainty and related beliefs over future climate change and climate policy interact with asset prices and technological investments in both fossil fuel and clean energy production assets. Moreover, it addresses the question of how policies and financial instruments can be designed to efficiently address these long-run risks, as well as potential investment inefficiencies, in order to minimise the resulting cost to society. The

analysis is carried out using numerical modelling, and particularly integrated assessment and asset pricing models, building on previous work by the researchers.

Short- and Long-term Impacts of Climate Extremes (SLICE)

M. Zimmer in cooperation with T. Geiger and C. Otto, Potsdam Institute for Climate Impact Research (PIK), A. Zimmer and J. Granadillos, Climate Analytics, and D. N. Bresch, ETH Zurich, for the German Federal Ministry of Education and Research, November 2018 to October 2021.

Despite significant progress since the last Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), the long-term economic impacts of extreme climatic events like floods, storms, and droughts are still poorly understood. Since extreme events are projected to intensify under global warming, gaining a sound understanding of the main impact channels through which extreme events cause long-term impacts on economies and societies is essential to quantifying the overall costs of climate change and to inform decision-makers of the implications of mitigation targets and effective adaptation strategies.

The SLICE project aims to fill this knowledge gap. Our analysis covers low-, middle-, and high-income countries. In a first step, we use empirical methods to identify the historical long-term effects of extreme events on households and on the macroeconomic level. We specifically focus on the role of public spending and debt, insurance schemes, distributional aspects, and poverty, as these are key determinants of the long-term losses incurred in the aftermath of disasters. Based on these findings, we develop two separate dynamical models to represent the long-term effects at the micro- and macroeconomic level, which are subsequently employed to assess future risks. To this end, we combine projected hazards with socioeconomic data and translate them into direct economic damages. We then use these direct damages as an input for the dynamical models to calculate long-term losses under different levels of global warming. Finally, we link our micro- and macroeconomic analyses to assess the effectiveness of different adaptation options ranging from physical measures (e.g. dikes) to financial instruments (e.g. insurance schemes). Our work identifies regional hotspots, where the strongest climate extremes impact the most vulnerable economies, and

assesses strategies to enhance economic resilience, which is critical to the effective operation of the Green Climate Fund (GCF). A strong stakeholder focus is ensured by a dedicated stakeholder workshop, the publication of policy briefs, and close collaboration with public and private partners.

ifo Center for International Economics

The ifo Center for International Economics primarily works on topics in the following fields:

- globalisation and labour markets
- trade costs and trade policy
- trade and environmental policy

In the first area the Center is supported by research professors Devashish Mitra from Maxwell School of Public Administration, Syracuse University, and Marc-Andreas Münder, University of California, San Diego. Research into trade costs and trade policy is conducted in cooperation with the professors Wolfgang Keller, University of Colorado, Boulder, Mario Larch, University of Bayreuth, and Wilhelm Kohler, University of Tübingen. Peter Egger, ETH Zürich, advises the Center in all of the fields mentioned above.

Investigating tariff policy

In 2018 the ifo Center for International Economics worked intensively on topics concerning trade policy. Central to its research were issues like Brexit, the tariff policy pursued by US President Donald Trump, European trade policy and fundamental questions regarding the theoretical and empirical modelling of trade related issues, as well as the interaction between political and economic factors determining trade policy.

EU-US trade balance figures

The Center conducted several trade related studies for clients like the German Federal Ministry of Economic Affairs and Energy, the European Parliament and the German Chamber of Industry and Commerce. These studies attracted a great deal of attention from both the media and policymakers. One example of this high-profile attention was the meeting between European Commission President Jean-Claude Juncker and US President Trump. Figures on the EU-US trade balance produced by the Center were relevant to the discussion on the increase in tariffs between both regions. Another study conducted for EconPol Europe, which empirically elucidates the question of the tariff incidence (who is really going to pay for the tariffs implemented by US President Trump), was even cited by the White House.

The Center Director Gabriel Felbermayr gave numerous speeches on trade related topics and was published in several newspaper articles. He was also interviewed by various TV and radio programmes in 2018. These activities earned him a high spot in the FAZ ranking of 2018 where he ranked seventh.

DIRECTOR AND POSTDOCS

For the ifo Center for International Economics 2018 was characterised by forthcoming personnel changes. In May the Center's Director, Prof. Gabriel Felbermayr, was appointed President of the Institute for the World Economy (ifw) in Kiel, a position that he will hold as of 1 March 2019. The preparations for these changes took up some resources in 2018, but Gabriel Felbermayr nevertheless published two articles in the Journal of the European Economic Association. He also acted as Associate Editor of this journal, and wrote research reports and policy briefs. Gabriel Felbermayr also played a leading role as scientific advisor in drafting a report on investment protection for the German Federal Ministry of Economic Affairs and Energy and contributed to a letter on the measurement of trade imbalances to the German federal economics minister. He is member of the board of Associate Editors of the European Economic Review and the International Review of Economics and Finance. He is also an associate of the board of the European Trade Study Group of scientific advisors for the institutes of applied economic research in Tübingen and of the Africa Commission of the German economy. In addition, he sits on the Committee of International Economics in the society of social politics (Verein für Socialpolitik) and will be joining the extended board of executives of the society starting in January 2019.

The deputy director, Dr. Erdal Yalcin, received the offer of a professorship at Constance College (Hochschule Konstanz) and acceded to this position in summer 2018. Under a special-order contract he is still working with the Center to finish jointly started projects. Two of the projects finalised in 2018 include a study on the free trade agreement with the Mercosur member states, conducted for the German Federal Ministry of Economic Affairs and Energy, and some research on the impact of non-tariff barriers to trade. Dr. Inga Heiland, one of the Center's postdocs, accepted an offer to work at the University of Oslo.

Dr. Jasmin Gröschl worked on a variety of topics related to international economic policy. One focus was on the scientific use of quantitative studies the Center conducted on behalf of the German Federal Ministry of Economic Affairs and Energy. She worked on the ex-post estimation results of free trade agreements and the simulation of the effects of these agreements in a general equilibrium framework. A study on this topic

was published in 2018 in the *Journal of Common Market Studies*. Jasmin Gröschl also worked on examining the empirical effects of natural disasters and functioned as a supervisor for one of the Center's doctoral students, Thomas Steinwachs.

Andrea Ariu spends a fifth of his research time working for the Center. The remainder of his time he is assigned to the special research department 190 (Sonderforschungsbereich 190), where a subarea is overseen by the Center's Director. In 2018 Andrea Ariu continued working on his projects on service trade. One of his papers was accepted for publication by the *Journal of International Economics*.

In July 2018 Prof. Yoto Yotov of Drexel University, Philadelphia, US, joined the Center. He will be at ifo until August 2019, helping with research, policy consulting and supervising the doctoral students at the Center. He is a prestigious empirical researcher in international economics, who is particularly well known for his work on the estimation and simulation of structural gravity models. In 2018, he published six essays in well-known international journals. Two were published in the *European Economic Review* and one in the *Journal of International Economics*. His time at ifo has been very productive to date. Four of his articles are currently under revision and are soon to be published in excellent journals, including the two journals mentioned above and the *Economic Journal*. Together with Erdal Yalcin and Gabriel Felbermayr, Yoto Yotov built up a database on trade sanctions, which is currently being evaluated. In March 2019 a conference on this database will be held in Philadelphia.

Yoto Yotov plays an important role in mentoring the doctoral students at the Center for International Economics. In December, he helped to organise a workshop where the Center's researchers met with internationally renowned researchers like Esteban Rossi-Hansberg (Princeton), Andreas Moxnes (Oslo), Claudia Steinwender (MIT) and Gianmarco Ottaviano (LSE and Bocconi University).

DOCTORAL STUDENTS

Over the course of 2018 Thomas Steinwachs and Alexander Sandkamp finished and submitted their dissertations. Thomas Steinwachs helped to build up a dataset on the detection of meteorological and geolog-

ical anomalies and merged this vastly disaggregated dataset with other data sources. These anomalies are exogenous shocks, which can be relevant for the examination of causal inference related to several research questions. One such issue, studied by Thomas Steinwachs, looks at the impact of natural disasters on international migration flows, how these shocks spread and which channels (e.g. infrastructure) are relevant to them. Parts of his work have already been published in good journals, including an article on the impact of the Schengen agreement on international trade flows in the *Journal of Common Market Studies*. This article originated from a consulting mandate by the German Federal Ministry of Economic Affairs and Energy. Thomas Steinwachs spent a large share of his time on "ENGAGE", a collaborative project with the Potsdam Institute for Climate Impact Research (PIK). It is financed by the Leibniz Association, and evaluates the effects of meteorological anomalies and the role of trade in dealing with these effects.

In his dissertation on trade policy Alexander Sandkamp assesses how European anti-dumping tariffs affect prices and import quantities. This is an important question that is hard to clarify due to the difficulty of ascertaining the direction of causal effects. Sandkamp uses the eastward enlargement of the European Union as an exogenous variation in anti-dumping tariffs for new member states. He finds that European tariff policy had sizeable quantity effects; and that consumer prices increased substantially. Alexander Sandkamp wrote this research paper as a single author, and was invited to resubmit it to the *Journal of International Economics*. Another piece of his work draws similar conclusions focusing on the export side by using Chinese company data, as China is the country most frequently subject to this kind of tariff. To extract causal effects, Alexander Sandkamp and his co-author use elaborate panel econometric techniques. He was also invited to resubmit this paper, this time to the *European Economic Review*. His research on anti-dumping tariffs stemmed from two related articles on the European Parliament. A different article on non-tariff barriers has already been accepted for publication in the *Review of International Economics*. This paper was based on a project conducted by the Center on behalf of the Bertelsmann Foundation.

Feodora Teti, Marina Steininger, Sonali Chowdhry and Martin Braml continued to work on their dissertations

How natural disasters impact migration flows

Effects of anti-dumping tariffs on Chinese companies

Dynamic database of preferential tariffs

in 2018. With the exception of Ms Chowdhry, who is part of the European research network EUTIP – a project financed under the Horizon 2020 programme – the Center’s other doctoral students are participating in the QUANTAGG (“Quantitative Analysis of Global Governance Issues”) project. This project will be completed by the Center at the end of 2019.

Feodora Teti worked, among other things, on the creation of a comprehensive tariff database. Official sources on these tariffs are largely incomplete and updated infrequently. They also frequently exclude preferential tariffs (tariffs applied in free trade agreements) and lack coverage of developments in tariff rates over time. Good tariff data is essential for trade research and the creation of such databases is crucial. For this reason, this project was partly financed by the World Bank. Feodora Teti also took a leading role in a project studying the relevance of rules of origin based on the tariff data that she collected. The study shows that rules of origin, which are frequently seen as a burden on exporting firms, are often superfluous in practice. These rules are implemented to ensure that goods channelled through third countries, in the case of a free trade agreement, are not subject to tariff privileges. Empirical evidence indicates, however, that a deflection of commodity flows is often not profitable in practice. This is because external tariffs between trade partners are often quite similar, and transport costs are too high to turn a profit from this deflection mechanism. Feodora Teti was invited to resubmit her work on rules of origin to the *Journal of International Economics*.

Feodora Teti is also working on the evaluation of the tariff database. She is investigating, for instance, whether the rules on free trade agreements defined in article XXIV GATT are followed in reality. In 2019 she will continue her work at Dartmouth College in the United States. The submission of her dissertation is scheduled for spring 2020. Despite the departure of the department head, Feodora Teti will remain at the Institute.

Evaluating the consequences of US President Trump’s trade policy

In 2018 Marina Steininger mainly worked on the quantitative modelling of free trade agreements. While modelling the impact of Brexit was the focus of attention in 2017, this shifted to evaluating the consequences of US President Donald Trump’s trade policy in 2018. Marina Steininger also contributed to an important study by the German Federal Ministry of Economic Affairs and

Energy on this topic, which has not been made public to date. In addition, she worked on two smaller studies: one examining the impact of Brexit on Hesse (for the ICC Frankfurt) and the other one doing the same for the region of Upper Bavaria (for the ICC of Upper Bavaria).

In 2017 Marina Steininger contributed to a study on the free trade agreement between the EU and Japan, which was produced in collaboration with Keio University in Tokyo. Work on this study conducted on behalf of the Bertelsmann foundation was continued by the German-Japanese team of authors in 2018. A paper based on this research was accepted for publication in the *Journal of the Japanese and the International Economies*. The innovation of the study is that an existing agreement between the EU and Republic of Korea formed the basis for the quantification in the ex-post analysis. In their essence and formal implementation, both agreements are quite similar. This approach largely avoids making arbitrary assumptions about the effects of the new agreement on non-tariff barriers to trade. The results show a projected long-term increase in real income in Japan of USD 18 billion. The largest part of this effect can be attributed to non-tariff barriers. Tariffs account for only a minor part of this change in real income. For Germany the simulation projects a change of about USD 4 billion, which is also largely due to the effect of non-tariff barriers.

Marina Steininger also examined the trade effects of the euro. To this end, she analysed whether the introduction of the euro in 1999 led to a reduction in transaction costs and an increase in trade in different sectors. She then examined the influence of these effects on the economies involved.

Marina Steininger will spend part of 2019 at the Paris School of Economics. Her dissertation is scheduled for submission in spring 2020. She will also stay at ifo, but will be supervised by Prof. Felbermayr.

Martin Braml continued to work on a project on the political economy of trade in 2018. The project evaluates the question of how to empirically explain the preferences of people regarding globalisation, protectionism and large trade related projects like the Transatlantic Trade and Investment Partnership (TTIP). To this end, Mr Braml used extensive data from the Eurobarometer survey, which is conducted twice every year in all EU member states. The study’s results suggest that clas-

sical factors of influence like education or affiliation with a certain sector have a statistically significant effect on people’s preferences. However, these factors explain only a small share of the preferences of individuals. A more important factor is the trust these individuals have in European institutions. Belonging to the German-speaking population also seems to be an important factor, at least when it comes to preferences regarding TTIP. The findings suggest that preferences regarding globalisation do not depend as much on socioeconomic parameters as they do on national narratives and variables of behavioural economics, like trust. In early 2019 Martin Braml’s work on this topic will be published as a working paper and sent out for further assessment.

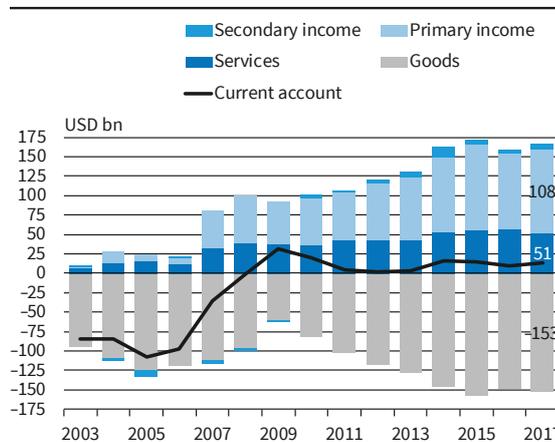
In 2018 Mr Braml, who is financed by the QUANTAGG programme, also studied the distributional effects of tariff reduction. He does this by focusing on the price side effects, which were given less attention in previous research. The main objective is to analyse which parts of the population benefited most from the reduction of tariffs. Micro data from the German income and consumption sample, for example, is combined with data on tariffs. One crucial question in this context is if tariff reduction had pass-through effects on German households; and if so, what the magnitude was of these effects. He will continue to work on this ambitious project in 2019. He will spend part of 2019 at the University of Stanford.

Martin Braml also worked with Gabriel Felbermayr on various analyses of the US-EU trade balance. This resulted in a number of publications that received some international attention. In the first half of 2018 the US President pointed to the EU’s large trade surplus. In this respect he is partly right, at least in terms of goods trade. The following figure shows that the US had a USD 153 billion deficit with the EU in 2017. But on the other hand, there is also a USD 51 billion surplus in service trade and a USD 108 billion surplus in primary income for the United States.

Combining these items – and omitting secondary income, which is negligible for the calculation – this results in a trade surplus for the US of around USD 14 billion. This has been the case since 2009 and the figure is likely to be similar in 2018. The imbalance is mainly due to the large surplus in primary income, which represents the income generated from US investment in

Europe net of the income from European investment in the United States. Tech companies in particular use European subsidiaries to generate patent income. European service imports do not show up as such in the US trade balance as a result, but are noted as primary income.

Components of US-EU Balance of Payments
Since 2003



Source: Bureau for Economic Analysis, 2018. © ifo Institute

Neither Commission President Juncker nor German Chancellor Merkel has drawn attention to these facts in their discussions with the United States to date.

Explaining trade balance discrepancies

However, there is admittedly a problem because European statistics show a different picture whereby the EU does have a sizeable trade surplus with the US. Martin Braml worked hard to explain this discrepancy during 2018. The results of his work are documented in several working papers. His dissertation is also scheduled for submission in spring 2020. Like the other doctoral students financed through QUANTAGG, he will remain at the Institute, but will be supervised by Gabriel Felbermayr.

In 2018 Sonali Chowdhry completed her doctoral courses and the interdisciplinary training programme required by the EUTIP. This exposed her to different economic legal and political aspects of trade policy.

The EUTIP network consists of various leading researchers from different European institutions. In addition to the Center Director, they include researchers like Lionel Fontagné (Paris School of Economics), Elaine Fahey (City University London) and Fabian Amtenbrink (Rotterdam). Sonali Chowdhry spent part of her time in

2018 in a secondment at the Bruegel think tank in Brussels. There she worked with André Sapir, a leading European trade expert, on a study analysing the Japan-EU free trade agreement for the European Parliament.

For her dissertation she is working with French company data to answer the question of how, and to what extent, a free trade agreement affects companies of different size and productivity. Economic theory points out that large firms are affected differently by trade costs than small firms. This difference, however, depends on the type of trade cost concerned. The reduction of fixed costs, for example, is found to help small firms increase their participation in international trade, while a reduction in variable costs (like tariffs) benefits larger firms. The French data make it possible to link very detailed import-export data at the firm level with company information. Unfortunately, such data does not exist for Germany. Sonali Chowdhry will spend part of 2019 at CEPII in Paris and another part at ETH Zurich, both of which are also EUTIP project partners. She will follow Gabriel Felbermayr to Kiel after his departure.

Reducing fixed costs helps small firms

Projects Completed in 2018

The Single Market and Movement of Services and Labour – How Does Red Tape Affect Competition?

G. Felbermayr, F. Teti, D. Streich for the IHK Munich and Upper Bavaria, November 2017 to February 2018, publication as *IHK Impulse für die Wirtschaftspolitik*, 2018.

The study was written as part of the framework agreement with the IHK Munich and Upper Bavaria. The successful integration of Bavarian companies into the European single market is an important pillar for employment and growth in the Free State of Bavaria. Cross-border global value chains are now a reality, especially in the manufacturing sector, and the core of these value chains is often found in Bavaria and neighbouring regions. However, national borders are still a major obstacle to intra-European trade in services. The removal of these barriers has stagnated in recent years. This is worrying as 75% of workers are employed in the service sector. The sector has been contributing to above-average growth in gross value added in recent decades and its inputs are becoming increasingly important to the competitiveness of the manufacturing sector.

Obstacles to intra-European trade in services

Unfortunately, Germany – and Bavaria as well – are not among the world leaders in the services sector, as is the case in industry. There are huge opportunities. The increasingly rapid digitalisation of the economy allows a growing number of service industries to participate in the international division of labour. Increased trade in services not only promises classic gains in specialisation and economies of scale, it could also be an effective means of mitigating the effects of labour shortages, which are increasingly affecting many industries. However, the legal framework must be right for this.

This study discusses ways to improve how the Bavarian economy is embedded in the cross-border regional services market to increase productivity and secure economic wealth.

We proceed in three steps. First, we survey existing trade barriers in the services sector. We focus on the change of barriers over time and try to cluster them. Despite a rather disappointing data situation, robust trends and structures can be demonstrated. The second step shows the consequences of the existence of these barriers on trade costs, trade flows and relevant economic aggregates. Finally, trilateral cooperation opportunities in the triangle Bavaria-Austria-Czech Republic will be discussed with the aim of reducing barriers. The goal here is to work out concrete policy recommendations.

Brexit and its Economic Consequences for the German State of Hesse

G. Felbermayr, R. Lehmann, M. Steininger, T. Stutzmann for the Frankfurt am Main Chamber of Commerce and Industry, March 2018 to April 2018, publication as *IHK Impulse für die Wirtschaftspolitik* 2018 and *ifo Forschungsbericht* 93, ifo Institute, Munich 2018.

In the course of Brexit, Germany's real GDP will fall compared to the current status quo. The average effect for Germany, however, masks significant heterogeneities between different subnational entities such as the German states. The German state of Hesse faces a special situation, as Frankfurt am Main lies at the heart of the German financial sector. Overall, the German state of Hesse and the important metropolitan region of Frankfurt-Rhine-Main should be less heavily impacted by Britain's exit from the European Union than Germany. In the case of a "hard Brexit", Hesse's price-adjusted gross domestic product (GDP) will be -0.17% lower

than in the base scenario (versus Germany: -0.23%). The effect on the metropolitan region will be like that on Hesse. If, on the other hand, a more ambitious free trade agreement was to be reached (“soft Brexit”), the effects on Hesse and its metropolitan region would be -0.08% compared to the baseline (Germany: -0.10%). Hesse stands to be less strongly affected thanks to structural economic differences in its economy. There are two main reasons for this: first, the sector that stands to be the most strongly affected by Brexit, namely manufacturing, accounts for a smaller share of added value in Hesse than in Germany. Second, financial, insurance and corporate services provides are traditionally more present in Hesse than in Germany on average. These are the three economic sectors that may even stand to gain from Brexit.

Impact of EU Tariff Changes on the German Economy

G. Felbermayr, J. Gröschl, M. Steininger for the German Federal Ministry for Economics and Energy, June 2018 to October 2018.

The headlines surrounding the White House and the incumbent US President have not faded since the beginning of his term. In the process, protectionism and the threat of measures to turn away from free trade and multilateral agreements are in the focus of the media. This study offers an alternative, constructive approach. Instead of worst-case scenarios, the potential effects of trade liberalisation measures between the EU and the US are examined. Specifically, the effects of a reciprocal tariff reduction between the US and the EU on industrial products and, in a subsequent scenario, the reduction of import tariffs in the agricultural sector between the two trading partners are examined. Furthermore, the study examines the impact of liberalising the US public procurement market. Trade cost-cutting measures are simulated and the resulting consequences analysed for Germany, the EU, the US and third countries.

The simulated tariff reductions do not lead to drastic changes in international trade structures in the long term. Above all, the reduction of non-tariff trade barriers, but not the abolition of tariffs, influences international trade. All considerations lead to the conclusion that a balanced, fair agreement with measurable mutual advantages can be achieved only through a comprehensive negotiation process. Even if the negoti-

ations were freed from the most difficult chapters that have led to much controversy in the past, there is still a great deal of uncertainty about the political feasibility of such an agreement.

Economic Growth Impacts of Climate Change (ENGAGE)

G. Felbermayr, T. Steinwachs for the Leibniz-Gemeinschaft (SAW), led by the Potsdam Institute for Climate Impact Research, March 2016 to December 2018.

The IPCC 5th Assessment Report reveals major knowledge gaps regarding the socioeconomic impact of climate change, especially changes in economic growth. This prevents the integrated assessment of impacts, mitigation and adaptation. ENGAGE aims to move towards closing these gaps by (a) developing a sound conceptual and empirical understanding of the channels through which climate impact affects growth, (b) estimating economic damages from selected impacts in a changing climate and socio-economic environment, particularly with regard to long-term growth effects, and (c) exploring how the inclusion of growth effects changes the integrated assessment of selected impacts and mitigation strategies. This comprehensive approach will contribute to the next generation of integrated assessments for climate policy advice.

ENGAGE addresses three challenges: a) to develop a sound theoretical understanding and empirical quantification of the channels through which climate impacts may affect long-term growth and development patterns; b) to develop new approaches for a bottom-up economic valuation of biophysical impacts bridging the gap between impact and economic models; and c) the integration of impacts and mitigation in a global dynamic growth framework.

ifo conducts econometric analyses of the impact of natural hazards on economic outcomes to explore potential mechanisms at the hazard/growth nexus.

Since most existing studies use outcome-based disaster data, which suffer severe reporting, endogeneity, and aggregation issues, ifo is building a new database of geological and meteorological events comprising exogenous data on physical intensities collected from primary sources, geographically disaggregated at country, region, and grid cell level.

Understanding how climate change impacts long-term growth and development

Spatial spillover of natural disasters on economic activity

To this end, the ifo GAME Database on geological and meteorological events has been updated to a longer time period (1979–2014) and has been completely reconstructed from scratch on a geographically disaggregated coordinate raster grid (50 km x 50 km). In cooperation with researchers from the Potsdam Institute for Climate Impact Research (PIK), the database has been enriched with new components, like more precise measurements of wind speeds via wind field models.

Currently, this database is used in the project “Shedding Light on the Spatial Diffusion of Disasters”, to analyse the spatial spillover effects of natural disasters on economic activity (measured by night light emissions) on a global coordinate raster grid.

This is done in cooperation with two researchers from the University of Utrecht. A corresponding working paper appeared in the CESifo Working Paper Series (No. 7146 2018) in summer 2018. In a follow-up project with the working title “Illuminating the Spatial Connectivity of Disasters”, the role that country borders and infrastructure connectivity play in the spatial transmission of disaster effects is examined. Both projects are a part of the inaugural dissertation “Geography Matters: Spatial Dimensions of Trade, Migration and Growth”, submitted in September 2018 by Thomas Steinwachs to attain a Doctor oecologiae publicae (Dr. oek. publ.) at the University of Munich.

An ENGAGE project workshop with the participation of project partners from PIK took place at the ifo Institute on 18 and 19 October 2018. During this workshop, achieved research outputs were discussed and the scope for future project cooperation was addressed.

While ifo successfully completed its contribution to ENGAGE at end of October 2018, the final project report is not due until August 2020. The reason for this is a cost-neutral project extension on the part of PIK.

Current Projects

Quantitative Tools for the Analysis of Global Governance Issues (QUANTAGG)

R. Aichele, F. Teti, M. Steininger, M. Braml for the Leibniz-Gemeinschaft (SAW), January 2016 to December 2019.

The goal of QUANTAGG is to contribute towards the development of quantitative tools for policy analysis that can be used to address some of the most pressing international cooperation issues of our times. These include the consequences of trade liberalisation and the reordering of the multilateral trade order, and international climate policy. In the last few years, new methods in quantitative trade modelling have become available, but they are only starting to be used for applied trade policy analysis. QUANTAGG attempts to make use of the methodological advances to improve our understanding of important developments in the global economy and to inform economic policy.

In a research paper with Inga Heiland, Rahel Aichele investigates the extent to which trade liberalisation has contributed to global production fragmentation and the formation of production networks, taking global value chains explicitly into account. The work derives structural equations for value-added trade flows and indicators of production sharing put forward in the extant literature and develops model-based measures for production networks from a multi-sector gravity model with inter-sectoral linkages. The model is used to perform a counterfactual analysis of China’s WTO accession in 2001. The associated trade cost changes spurred global production fragmentation, explaining about 3–9% of the decrease in the world DVA ratio – an indicator of production sharing – as observed between 2000 and 2007. The results also imply that China’s WTO accession was a driving force behind the strengthening of production networks with its neighbours. The paper is forthcoming in the *Journal for International Economics*.

Feodora Teti, together with Gabriel Felbermayr and Erdal Yalcin, investigates the necessity of rules of origin in free trade agreements (FTAs). Rules of origin exist to prevent non-member countries from exporting their goods to an FTA member via the FTA country at the lowest external tariff rate and then transshipping

the good within the FTA – also called trade deflection. The research paper uses a new tariff database to analyse differences in countries' external tariff schedules and finds that the latter correlate strikingly for countries belonging to the same deep FTA. This is due to how countries select with whom to negotiate and sign an FTA, rather than ex-post convergence. Therefore, in most FTAs, for the vast majority of products, trade deflection is not profitable even in the absence of costly rules of origin, rendering rules of origin unnecessary. This empirical research paves the way for a quantitative analysis of the effects of rules of origin. The paper is currently in the revision and resubmission process with the *Journal for International Economics*.

Together with Gabriel Felbermayr and Jasmin Gröschl, Marina Steininger investigates the economic consequences of Brexit in a quantitative application. The paper builds on further developments of the trade simulation model, which are part of this project. A special focus of the analysis are structural estimations of required model parameters, which allow for asymmetries and take different steps of European integration into account. For another study together with Gabriel Felbermayr, Marina Steininger estimates the trade creation effects of euro adoption, which result from a reduction in transaction cost. This work contributes to existing literature, which has predominantly focused on the (macroeconomic) disadvantages of euro adoption, due to the loss of an independent interest and exchange rate policy, for example, and which has disregarded the welfare-relevant reduction of trade costs.

In joint research with Gabriel Felbermayr, Martin Braml investigates social preferences for trade liberalisation and globalisation. The study, which addresses the political economy of trade politics, is based on survey waves of the Eurobarometer. This set-up also makes it possible to identify national and regional differences in attitudes within the EU. Martin Braml, together with Michele Battisti, Florian Dorn, and Gabriel Felbermayr, investigates the effects of global trade on real incomes induced by price changes in consumer goods under the assumption of non-homothetic preferences. Trade liberalisation is likely to affect the prices of goods and services, in particular, and most directly those of tradable goods. To the extent that different types of consumers systematically buy different types of goods, trade affects the overall cost of living of consumers

heterogeneously. Thereby trade liberalisation impacts the distribution of purchasing power across individuals. Presumably, poorer households save less and spend a larger income share on goods. Simultaneously, they tend to consume more imported goods (which are often cheaper and of lower quality). Thus, poorer households suffer relatively more from customs duties. Vice versa, we hypothesise that lower income deciles should also benefit disproportionately from tariff cuts implemented globally in post Uruguay-Round times. Using data from the Income and Consumption Survey and high-resolution price data from the German Statistical Office, as well as tariff data, we test the hypotheses outlined above and expand the research field of globalisation consequences, which has tended to focus on heterogeneous labour market effects rather than on real income effects in previous years.

Part of the project is also to organise workshops. On December 13 and 14, a workshop with approximately 35 participants will be hosted.

International Market Interactions, Institutions and the Costs of Natural Disasters

J. Gröschl for the DFG, January 2017 to December 2019, publication as CESifo Working Paper No. 7146, 2018.

Natural disasters can result in severe economic shocks, with implications for human and economic development. Moreover, anthropogenic climate change could increase the frequency and severity of such events. Thus, studying how past natural disasters shaped economic outcomes and how these had been conditioned by institutional set-ups or by trade openness, migration, and capital flows, can provide important insights into how to cope with the effects of climate change in the future.

Empirical studies suggest that similar disaster events have different effects throughout the world and that countries' institutions, as well as their embeddedness in international markets, are important in adapting to natural disasters. However, most of the empirical literature suffers from a number of problems. First, studies tend to use information on the incidence of natural disasters from databases drawn from insurance records or news. This introduces severe reporting and endogeneity biases, as both insurance penetration and damage caused are correlated with development. To tackle this issue, Felbermayr

Poor households suffer more from customs duties

Similar disasters have different effects around the world

and Gröschl (2014) have proposed a database, ifo GAME, which collects information on geological and meteorological events from primary sources. Second, disasters are often local events; hence, mapping them to countries of heterogeneous size can result in measurement error and attenuation bias. This problem can be resolved by using recently available global data at the grid level.

This project has developed an extended database on meteorological and geological intensities and exploits it to answer a number of research questions situated at the crossroads of environmental economics, development economics and international trade. Given the seminal features of the underlying disaster and climate data, the results obtained will significantly support evidence-based policy-making for climate action in the context of sustainable development.

The research strategy follows three steps: first, we investigate how natural disasters affect international trade and production patterns. Second, we analyse reductions in economic growth due to natural disasters at the local level and potential spillover effects using unique grid-cell-level data. Connectivity of local cells plays a major role in spillover patterns and is analysed in this context using global road network data. Third, we will identify how firms behave if they are directly affected by natural disasters or indirectly through partner firms using Colombian firm-to-firm transaction data. Finally, we use unique international money transfers and migration corridors to identify the impact of natural disasters on the behaviour of agents.

In 2018, we created the dataset on natural disaster intensities at a $0.5^\circ \times 0.5^\circ$ grid cell level for 1979–2014 around the globe. The CESifo Working Paper “Shedding Light on the Spatial Diffusion of Disasters” (with G. Felbermayr, M. Sanders, V. Schippers and T. Steinwachs, CESifo Working Paper 7146, 2018) deploys the data and combines it with night light emission data for 24,000 grid cells for the period 1992–2013. In this paper, we find pronounced negative effects at the local level and strong positive spatial spillovers. Economic activity, however, reacts differently across types of weather shocks. Our results also indicate that spatial spillovers after an extreme weather event tend to be local phenomena. Finally, we identify substantial heterogeneity across income groups.

Furthermore, major work has been undertaken in analysing the role of connectivity of cells for spillovers. A paper called “Illuminating the Spatial Connectivity of Disasters” is on the verge of being finalised. It uses grid-level disaster intensity data, combined with night lights as a proxy for economic activity and global data on road networks to capture the connectivity of neighbouring cells. We show that spillovers on economic activity from weather shocks work only through well-connected cells.

As part of this project, a three-month research stay at the University of Adelaide was undertaken in the first quarter of 2018. During this time, we worked on a project called “Quantifying the Short-Run Productivity and Expenditure Effects of Natural Disasters”. In this paper, we estimate the short-run effects of natural disasters on international trade using a panel of monthly trade data and data on two types of short-lived natural disasters: earthquakes and storms. We use the effects of disasters on a country’s total factor productivity and on expenditure to inform a dynamic quantitative trade model. Results show strong heterogeneity across disaster types and country groups: while countries with high debt levels and least developed countries see both their imports and exports reduced, developed countries are almost never affected. Disaster impacts are strongest within the first quarter after the shock and vanish within a year of disaster occurrence, highlighting the importance of using data at a higher frequency than annual data. This work is being jointly conducted with a researcher from the University of Adelaide and is still ongoing.

Currently, we are working to clean the Colombian firm-to-firm transaction level data to be able to match it to our gridded geological and meteorological events database. This major datawork will be ongoing in 2019. When finalised, the information on firm location around the globe will be matched to the disaster intensity data and used to analyse the behaviour of firms when directly or indirectly affected by a disastrous event. In addition to this data provision, we are also working to clean our information on money transactions and collecting information on major migration channels around the globe. In 2019, we plan to look into the effects of natural disasters on money transfer flows on a fine local level in certain migration corridors.

Identifying the impact of disasters using money transfers

Transatlantic Trade and Investment Partnership International Training Network

G. Felbermayr, S. Chowdhry, EU/Horizon 2020/Marie-Sklódowska-Curie, project led by the University of Birmingham, October 2017 to September 2020.

This project deals with potential reforms to the European Union's trade policy. The heated public debate about TTIP, the free trade agreement negotiated between the US and the EU, has illustrated the need to reassess the way the EU negotiates trade deals and that old paradigms have become obsolete in the face of profound geopolitical, technological and social changes. The role that regulations concerning environmental protection, labour market institutions and consumer protection play in trade agreements has to be reevaluated. Other points for debate include the enforcement of investment protection clauses in bilateral treaties.

The project is handled by a consortium of eleven institutions: in addition to the ifo Institute, contributors include the University of Birmingham, ETH Zurich, Paris School of Economics, the University of Nottingham, Erasmus University Rotterdam, Università degli Studi di Torino, the German University for Administration in Speyer, the University of Passau, City University London and the Egmont Institute in Brussel. Martin Trybus of the University of Birmingham acts as project lead. The consortium is interdisciplinary, and consists primarily of economists and political scientists. This reflects the interdisciplinary nature of the research question. The project aims to train 15 Ph.D. students as experts in the area of European trade policy and to apply that knowledge in Europe and the world.

The ifo Institute will be working on rules of origin within the project. Such rules, which often involve considerable amounts of red tape, determine whether a good originates in a country that is part of a free trade agreement; and thus whether it can benefit from the agreement (through tariff exemption or accreditation). Empirical studies show that many exporters prefer paying a tariff over proving that a product is entitled to benefit from the provisions of the free trade area. Strict rules of origin render trade deals less effective. They can also have negative effects on third countries, since adhering to them can lead exporters to re-optimize their supply chain. The consortium began work on signature of the contract in April 2017. In October 2017, Sonali Chow-

dhry, who obtained her Master's degree in Economics from Oxford, was hired as a Ph.D. student at ifo. She will be working on rules of origin under the supervision of Prof. Felbermayr.

ifo Center for Macroeconomics and Surveys

Researching
inequality and
redistribution

The ifo Center for Macroeconomics and Surveys research focuses on economic policy analyses, macroeconomic research, and inequality and redistribution. The Center also provides services in the form of survey data and methodological expertise, as well as business cycle indicators and macroeconomic forecasts. The Center's "ifo Business Climate Index", a monthly survey of 10,000 German firms, receives considerable public and media attention as it is Germany's most important leading business cycle indicator.

Research Projects

The Center's research focuses on:

- economic policy analyses
- macroeconomic research
- inequality and redistribution

PROJECTS IN ECONOMIC POLICY ANALYSES

This research area covers a wide range of economic policy analyses.

The Center employs various methods to study the efficiency, welfare and stabilising effects of economic policies from national, European, and international perspectives. Researchers in this area conduct ex-post analyses using both macro and micro data to assess the impact of implemented reforms. Ex-ante analyses address the effects of reform proposals for the German tax-benefit system, fiscal policies in other EU member states, as well as the economic effects of fiscal integration in Europe using (behavioural) simulation models. These include ifo's tax-benefit microsimulation model for Germany (developed together with the ifo Center for Public Finance and Political Economy), EUROMOD, the tax-benefit microsimulation model for the European Union, and the NBER's TAXSIM model for the US. These models allow micro-based analyses of changes in tax and transfer policies and the simulation of counterfactual policy reforms. Based on the results of these empirical studies, researchers develop policy recommendations for designing efficient and equitable tax and transfer systems.

The Center has actively contributed to the current debate over euro area reforms through various research

projects and policy papers. It has published papers studying the economic effects of different fiscal union scenarios, for example of a common unemployment insurance scheme in the euro area. Researchers in this area have examined public attitudes towards those reforms by means of randomised survey experiments. In another policy-relevant project, the Center has developed the first dynamic scoring framework for modelling and analysing tax and benefit reforms for all EU countries together with co-authors from the European Commission and its Joint Research Centre. To this end, the researchers involved have combined EUROMOD with QUEST, the European Commission's dynamic stochastic general equilibrium (DSGE) model used for the analysis of structural reforms. This work has a direct policy impact, as the newly developed framework will be applied by the European Commission within the context of the European Semester in the future.

Another research area is the European Central Bank's monetary policy and its impact on financial stability and the overall economy. Special attention is paid to the analysis of TARGET2 balances. Furthermore, the Center's research focuses on the reform process of financial sector regulations, particularly with regard to the European Banking Union.

Projects in Detail

One focus of the research on national fiscal policies in EU member states is placed on analysing the efficiency effects of tax and transfer systems, as well as their redistributive and stabilising effects. Analyses are conducted using various empirical approaches and models, including the tax-benefit microsimulation model for the European Union (EUROMOD), which allows the micro-based analysis of changes in respective tax and transfer policies in the EU28 and the simulation of counterfactual policy reforms.

Two projects by Mathias Dolls, Clemens Fuest, Andreas Peichl and Christian Wittneben focus on the role of Automatic Stabilisers. The third project is a joint piece of work by Mathias Dolls, Andreas Peichl and Christian Wittneben, with colleagues working at the European Commission and its Joint Research Centre in Seville. It proposes a new methodology for ex-ante fiscal surveillance that incorporates behavioural and macroeconomic effects ("Dynamic Scoring").

Analysing changes
in tax and transfer
policies

In particular, the first project (“Crisis, Austerity and Automatic Stabilisation”) analyses how reforms of tax-benefit systems in the period 2007–2015 affected the automatic stabilisation capacity in the EU27 based on harmonised European micro data. Factors like unemployment benefits or income taxes can stabilise individual and aggregate income and smooth consumption demand in the event of shocks. Our analysis makes it possible to disentangle automatic changes in net government intervention from those that take place after explicit government legislation (discretionary changes), as well as changes in actual incomes and behavioural responses. We find automatic stabilisers to be generally heterogeneous across countries – both in levels and in terms of policy changes over the crisis. Stabilisation coefficients vary from less than 25% in Eastern European countries to almost 60% in Belgium, Germany, and Denmark. We discuss the implications of our results for post-crisis recovery.

Furthermore, we have developed a random utility-discrete choice model of household behaviour to analyse the incentive effects of taxes. This model is used in conjunction with and as an augmentation of the (static) tax model EUROMOD. The following two projects use the labour supply model as an integral part of the analysis. In the paper “Dynamic Scoring of Tax Reforms in the EU”, Mathias Dolls, Andreas Peichl and Christian Wittenben (together with S. Barrios, A. Maftai, S. Riscado, J. Varga, European Commission) present the first dynamic scoring exercise linking a microsimulation and a dynamic general equilibrium model for Europe. We illustrate our novel methodology by analysing hypothetical tax reforms on the social insurance contributions system for Belgium. Our approach takes into account the feedback effects resulting from adjustments and behavioural responses in the labour market and the economy-wide reaction to tax policy changes, which is essential to a comprehensive evaluation of the tax reforms. We find that the self-financing effect of a reduction in employers’ social insurance contributions in Belgium is substantially larger than that of a comparable reduction in employees’ social insurance contributions. This paper will be published in the *Journal of Policy Analysis and Management*.

The second project (“Labour Supply and Automatic Stabilisers”) estimates the stabilising effects of tax and transfer systems through a marginal incentives channel. When income taxes are progressive, the tax

rate that a household faces will fall following an income decline in a recession, thereby increasing work incentives and hence labour supply. This effect offsets part of the initial income decline, stabilising aggregate income and output. The magnitude of the effect depends on the change in the marginal tax rate after a change in gross income, as well as the elasticity of labour supply with respect to a change in the after-tax wage. We estimate a structurally discrete choice labour supply model and individual tax rates for households in the EU28 using the microsimulation model EUROMOD and EU-SILC household data. Our estimations show that up to 10% of a fall in household income is offset by an increase in labour supply. The EU average is roughly 2%. The results reveal a great deal of heterogeneity across countries, which is mainly due to differences in the progressivity of tax systems across Europe. The incentive effect is large in countries with a highly progressive tax schedule, while it is zero for countries with a flat tax, where the marginal tax rate is constant. Differences in labour supply elasticities also play a significant role.

A further study by Mathias Dolls, Clemens Fuest, Carla Krolage, Florian Neumeier and Daniel Stöhlker (“Incentivising Structural Reforms in Europe? A Blueprint for the European Commission’s Reform Support Programme”) assesses the EU Commission’s recently proposed Reform Delivery Tool. By providing fiscal transfers to member states, this tool strives to incentivise governments to conduct growth-enhancing structural reforms. We assess the current policy proposal, provide an in-depth analysis of its advantages and potential risks, and subsequently develop our own proposal for the design of such a fiscal instrument. This project is based on a report for the European Parliament, which assessed convergence in the Economic and Monetary Union, and is funded by the Leibniz Research Alliance “Crises in a Globalised World”.

A joint research project by Robert Lehmann and Xenia Frei, Felix Rösel, both of ifo Dresden, and Sebastian Langer, Leibniz Institute of Ecological Urban and Regional Development, Dresden, investigates whether election externalities exist between different layers of government. To this end, the authors draw on voting polls for Germany in total, and Berlin in particular, for the four main parties (CDU, SPD, the Greens and the Left). The results suggest that shocks in federal parliament voting intention impact state parliament

Progressive tax systems incentivise work in a recession

Shocks in federal parliament voting intention impact state parliament voting intentions

voting intentions, but – as a new finding – the reverse also applies to the same extent. The effects also differ across parties. Electoral externalities are lower for the CDU, but increase in times of government. The opposite holds true for the SPD and the Left. Detailed results were published as CESifo Working Paper No. 6375, 2017 and the paper has been submitted to an international journal.

Another project entitled “Explaining Spatial Patterns of Foreign Employment in Germany”, which is joint work by Robert Lehmann and Wolfgang Nagl, Institute for Advances Studies, Vienna, explores the main determinants of the regional representation of foreign employees in Germany. Since migration determinants are not exclusively the same between workers of different nationalities, the paper explains spatial patterns not only for total foreign employment, but also for the 35 most important migration countries to Germany. Based on a total census for all 402 districts in Germany, the study documents a significant degree of heterogeneity in migration determinants between nationalities. It turns out that cultural factors and amenities correlate in more cases with the nationality-specific representation of foreign employment compared to labour market and economic conditions. The authors identify three groups of countries for which different determinants are more important than others. The paper has been accepted for publication in *Regional Studies*.

A current research project by Mathias Dolls and Carla Krolage analyses the effect of financial incentives on retirement entry behaviour in the context of a major recent policy reform (“Rente mit 63”). This reform enables individuals with long contribution histories to retire much earlier without facing any deductions. Using high-quality administrative data from public pension accounts, we conduct both an event study and a coarsened exact matching procedure. The results indicate that individuals who are eligible for the early retirement scheme retire on average 5.4 months earlier.

The research group also conducted several projects assessing the recent tax reform in the United States. World Economic Survey Experts Dorine Boumans and Carla Krolage evaluate the impact of the tax reform around the world, as well as preferred policy responses. Carla Krolage and Klaus Wohlrabe also analyse the effects of the reform on German businesses’ tax burden and investment choices.

The research project “The German current account and capital market imbalances in the Eurozone against the background of German firm’s investment and saving decisions: causes and policy implications” is a joint work by Timo Wollmershäuser, Tobias Schuler, as well as Thorsten Klug and Eric Mayer at University of Würzburg. The project is supported by the German Bundesbank. It examines the behaviour of the German non-financial corporate sector, which became a net lender over the last two decades. The project has identified several channels that prove the close relationship between a rise in corporate net lending and the widening of the German current account surplus. In the first working paper we show that financial friction, world demand and labour supply shocks can explain around 40% of the variation in corporate net lending and the current account on a one-year horizon.

The paper “Financial Bubbles in Interbank Lending” by Tobias Schuler (jointly with Luisa Corrado at University of Rome) analyses the effects of several policy instruments to mitigate financial bubbles generated in the banking sector. The New Keynesian macroeconomic framework is augmented by endogenising boundedly rational expectations on asset values of loan portfolios and interbank trading. They show how a financial bubble can develop from a financial innovation. By incorporating a loan management technology and a bank equity channel, the authors can evaluate the efficacy of several policy instruments in counteracting financial bubbles. They find that an endogenous capital requirement reduces the impact of a financial bubble significantly, while central bank intervention (leaning against the wind) proves to be less effective. A welfare analysis ranks the policy reaction through an endogenous capital requirement as the best option. The results were published as CEIS Working Paper No. 47 and ifo Working Paper 260.

In “The Money Multiplier in the Financial Crisis: a Quantitative Evaluation” Tobias Schuler (jointly with Jargjit S. Chadha, Director National Institute of Economic and Social Research, UK, University of Kent and University of Cambridge, Luisa Corrado, University of Rome, and J. Meaning, Bank of England) presents a model of money that allows for a richer interaction between broad and narrow aggregates, framing them as the result of an optimal balance sheet decision by banks. The dynamics of this model offer an explanation as to why large increases in narrow money since the 2007–2008

Cultural factors outweigh economic conditions in spatial patterns of foreign employment

financial crisis have not led to dramatic increases in broad money in many advanced economies, but rather a collapse in the money multiplier. They also suggest that a credit supply shock, like the one that afflicted the US economy in 2008, increases banks' demand for narrow money and that, by meeting this demand perfectly elastically, central banks can attenuate any contraction in broad money and improve their macroeconomic performance. What is more, they show that a supply-driven change in narrow money imposed by the central bank, such as QE, can stimulate the macroeconomy. Lastly, they conduct a counterfactual exercise based on the 2008 crisis, which suggests that if the US Federal Reserve had not provided bank reserves to the extent it did, broad money would have fallen and the economy may have experienced a deeper contraction in output and a more protracted recovery. Their contribution was published in the *Proceedings of the Royal Economic Society Conference*, Brighton, UK, March 2018.

In the project "European Financial Integration through Securitisation", Tobias Schuler (jointly with Karolin Kirschmann and Jesper Riedler from ZEW) investigates the potential of the securitisation market for bank-based financial integration. In order to effectively increase cross-border risk sharing through securitisation in the EU, they suggest a two-pronged strategy: First, it entails further improving the existing regulatory framework in order to reduce barriers to a thriving securitisation market. Second, explicit incentives for risk sharing and securitisation in Europe should enter EU regulation and EU programmes. The suggestions are practical in that they build on adaptations of existing regulation and programmes, instead of devising new ones. Specifically, they make the case for linking the countercyclical capital buffer to a measure of geographic diversification as a way to strengthen incentives for risk sharing. Furthermore, they argue that pertinent changes to the terms and conditions of subsidies to securitised SME loans within the existing SME Initiative will help create cross-border investment opportunities in a strategically important sector of the European economy. The results were published as *EconPol Policy Brief 10*.

In the project "Capital Flows in the Euro Area and TARGET2 Balances" Timo Wollmershäuser (together with Nikolay Hristov, Deutsche Bundesbank, and Oliver Hülsewig, University of Applied Sciences Munich) looks at the consequences of the capital flow reversals in the euro area between 2008 and 2014. As in many

other episodes of sudden stops, the distressed economies of the euro area had to cope with sharply rising borrowing costs and significant difficulties tapping international capital and money markets. However, unlike the typical sudden stop, the economies of the euro area had access to additional resources to cushion the effects of private capital outflows. In particular, they enjoyed the extraordinarily accommodative provision of liquidity to commercial banks by the European Central Bank as part of its unconventional monetary policy measures. Commercial banks without access to private interbank lending, but with sufficient collateral, could obtain from their national central bank the liquidity they needed to compensate for the drying up of private funding. As the closing of these funding gaps by central bank liquidity was very unevenly distributed across member countries' banking systems, significant and persistent imbalances in the national central banks' positions in the Trans-European payment system, known as TARGET2, emerged. The main results can be summarised as follows. First, the recourse to the European Central Bank's unconventional monetary policy measures – reflected in the accumulation of TARGET2 balances – was mainly driven by capital flow shocks. In contrast, cyclical drivers like innovations to aggregate demand or aggregate supply do not seem to induce statistically significant changes in TARGET2 positions. Second, results from a counterfactual analysis suggest that the uneven recourse of national banking systems to the European Central Bank's unconventional refinancing operations caused real distributional effects across the euro area economies. While in the distressed euro area member countries deeper recessions could be avoided, the accumulation of TARGET2 claims in the core countries dampened aggregate economic activity.

Cushioning private capital outflows with European Central Bank liquidity

Unconventional refinancing avoided deeper recessions

PROJECTS IN MACROECONOMIC RESEARCH

The Center's macroeconomic research primarily investigates the causes and economic impact of macroeconomic shocks and deduces their implications for applied business cycle analysis. Thematically, its work focuses on the influence of financial market frictions and uncertainty, as well as the impact of monetary and financial policy measures on real and financial variables. Many questions are drawn from experiences and observations related to the global financial crisis and the euro crisis. As far as methods are concerned, both theoretical approaches, such as for example DSGE models, and empirical time series ap-

proaches such as VAR models are used. The survey data collected by the ifo Institute is often used in empirical work. Financial constraints and business uncertainty, for example, are identified using special questions from the ifo Business Survey at the firm level.

In the area of forecasting methodology, the Center primarily concentrates on processes of information condensation and selection against a background of the enormous amounts of data available to the forecasters (partly as a result of ifo's own surveys). For example, this area investigates whether micro data from business and surveys are suitable for forecasting macroeconomic time series. In addition, alternative condensation procedures for micro data on participants, industries and regional delimitations are examined. One example is boosting techniques that enable the identification of core information (e.g. firms with a high forecasting quality). Furthermore, processes like Bayesian model averaging or models with mixed frequencies are examined for their suitability and are further developed.

Projects in Detail

Negative effects of uncertainty are particularly strong when uncertainty is still low

In the project “Non-Linear Effects of Uncertainty and Real Fluctuations”, Christian Grimme (together with Steffen Henzel, Munich University of Applied Sciences) analyses whether the link between uncertainty and real activity is non-linear. The question is tackled both at the firm level with ifo micro data, and at the macro level with the help of non-linear vector-autoregressive models. Increases in uncertainty have negative effects, especially when the level of uncertainty is still low. This is because banks cut back on their lending particularly in those situations.

Bond yields increase with volatility, while bank loan rates fall

The study “Uncertainty and the Cost of Bank vs. Bond Finance” by Christian Grimme was heavily revised in 2018. It analyses the impact of an increase in economic uncertainty on the costs of corporate bonds and bank loans in Germany and the US. The paper shows that bond yields rise during periods of volatility, while bank loan rates fall. This difference is due to the fact that banks, unlike the capital market, collect borrower-specific information, because they are interested in long-term customer relationships. In uncertain times, banks gather more information to reduce uncertainty. This strengthens the bank's information monopoly, making long-term customer relationships more important to the bank. The bank reduces short-term interest rates in order to maintain customer relations.

The study “Time-Varying Business Volatility and the Price Setting of Firms” (Christian Grimme together with Rüdiger Bachmann, University of Notre Dame, Benjamin Born, University of Bonn, and Steffen Elstner, RWI) was revised in 2018 in the course of a Reject & Resubmit and is now forthcoming in the *Journal of Monetary Economics*. Empirical micro and macro models show that a rise in firm-level uncertainty increases the frequency of price adjustments, the dispersion of prices and the average level of absolute price adjustments. This leads monetary policy to become less effective in times of heightened uncertainty.

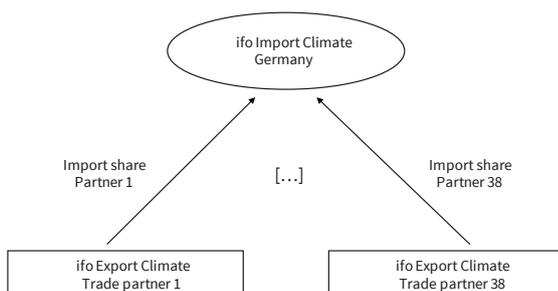
The project “The Price and Employment Response of Firms to the Introduction of Minimum Wages” (Sebastian Link) studies the short-term price and employment reaction of manufacturing firms and service companies to the introduction of a statutory minimum wage in Germany in 2015. Exploiting variation in treatment intensity across different industries and regions, the minimum wage effects are analysed by means of the unique firm-level survey data from the ifo Business Survey on expected and realised changes in prices and employment. In line with previous studies, the estimated employment effect is only very modestly negative and insignificant. In contrast, firms that were affected more strongly by the minimum wage increased their prices significantly more frequently in the period around its introduction. Making use of the high correlation between the survey data and administrative producer price indices reveals that the magnitude of the price effect is quantitatively large. Altogether, the results suggest that price pass-through is an important margin of adjustment for firms in response to minimum wages.

The project “The Effect of Disaggregate Information on the Expectation Formation of Firms” by Sebastian Link (jointly with Lukas Buchheim, LMU Munich) studies a new aspect of firms' expectation formation by asking whether expectations primarily reflect aggregate, industry-wide information (e.g., industry trends) or disaggregate information (e.g., firm-specific information). First, they show that disaggregate information is strongly associated with expectations even when controlling for aggregate information at high-dimensional industry levels. Moreover, aggregate and disaggregate information explain comparable shares of the variance in expectations. Second, they exploit a natural experiment to identify the causal effect of new information on expectations. The predictable demand effects for durable

goods due to the German VAT increase of 2007 implied that, at the time, durable goods retailers had access to more reliable information about their future demand than non-durable goods retailers. Using this observation in a difference-in-differences design, they find that “treated” firms were significantly more forward-looking ahead of the VAT-induced demand shifts. Overall, their results suggest that firms rationally incorporate disaggregate information into their expectations.

A research project entitled “Forecasting Imports with Information from Abroad” by Christian Grimme, Robert Lehmann and Marvin Noeller focuses on forecasting import growth. Imports are usually seen as the aggregates with the largest forecasting bias. Two reasons for this can be identified: first, imports are, next to exports and investments, the aggregate with the highest volatility in quarterly growth rates; and second, no import leading indicator exists. This research project fills this gap and creates a new class of leading indicator, the ifo Import Climate, for forecasting import growth for six advanced economies. The Import Climate is based on foreign survey results, as well as price and cost competitiveness measures. For the current and the following quarter, the Import Climate performs best for France, Germany, Italy and the United States under real-time conditions. For Spain and the United Kingdom, the Import Climate works particularly well for the latest set of data. Thus, the new indicator is also of high practical relevance. The results of the research project were published as CESifo Working Paper 7079 and are currently under review (Reject and Resubmit: *Oxford Bulletin of Economics and Statistics*). The results for Germany were made available to a German-speaking audience via the *ifo Schnelldienst* (Vol. 71, No. 12, pp. 27–32).

Diagram of Import Climate



Source: ifo Institute.

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In the project “Predicting Ordinary and Severe Recessions with a Three-State Markov-Switching Dynamic Factor Model. An Application to the German Business Cycle” by Magnus Reif together with ifo research professor Kai Carstensen and Markus Heinrich, both University of Kiel, and Maik Wolters, University of Jena, a model to date business cycle turning points has been developed. To this end, a variety of so-called large-data methods (LARS, LASSO, elastic-net) are applied to select the optimal set of indicators for each period. It is demonstrated that applying this automatic variable selection provides superior results compared to the case of a fixed set of indicators. Moreover, the model is used to compute short-term forecasts of German GDP growth. It is shown that a non-linear factor can significantly increase forecast accuracy.

Non-linear factors increase forecast accuracy

The project “Macroeconomic Uncertainty and Forecasting Macroeconomic Aggregates” by Magnus Reif investigates the predictive power of economic uncertainty. To this end, both linear and non-linear models are used. The author finds that non-linear models, i.e. models that assume different transmission mechanisms in times of high and low uncertainty, provide more accurate forecasts. In particular, the predictive densities provide a better description of the actual forecast uncertainty.

Furthermore, Magnus Reif (jointly with Markus Heinrich, University of Kiel) studies whether forecast accuracy can be improved by modelling structural change in the economy. In contrast to existing studies dealing with this question, the authors use mixed-frequency models, i.e. models that enable the use of indicators published with different frequencies. They find that this new model class provides especially precise inflation forecasts.

Precise inflation forecasting with mixed-frequency models

In the MPRA Paper No. 81772 Johanna Garnitz, Robert Lehmann and Klaus Wohlrabe evaluate the properties of the indicators gained from the World Economic Survey to forecasting the GDP growth of 44 different countries. Three key results emerge: first, models including WES information perform better compared to a benchmark model for the majority of countries. Second, the WES economic climate and the WES economic expectations in particular are the best-performing indicators that result from the World Economic Survey. Finally, in 70% of all cases, extending the country-specific forecasting model with WES information on key

trading partners increases forecasting quality. The article has been invited for resubmission in *Applied Economics*.

In addition, Stefan Lautenbacher (jointly with Rüdiger Bachmann, University of Notre Dame, Kai Carstensen, University of Kiel, and Martin Schneider, Stanford University) analyses newly collected firm-level ifo data on subjective uncertainty. This is part of the research project “Expectation Formation, Uncertainty and Ambiguity at the Firm Level, Measurement and Macroeconomic Implications”, which is funded by the Thyssen Foundation. The work of the project team has led to several new findings. Amongst others, the new data reveals that there is no simple linear relationship between perceived uncertainty and sales growth. In fact, uncertainty is generated by (larger) changes in past sales growth. In addition, uncertainty is closely linked to longer-term firm characteristics and the firms’ environment, and particularly to firm size, the sales growth trend, and the volatility of sales over time.

In their project “The Macroeconomic Projections of the German Government: A Comparison to an Independent Forecasting Institution” Robert Lehmann and Timo Wollmershäuser ask whether the official forecasts published by the German federal government are biased compared to the Joint Economic Forecast. Both the governmental and the Joint Economic Forecast are especially biased for longer forecast horizons, which is mainly driven by a false assessment of trend growth in gross domestic product. However, the government also significantly deviates from the Joint Economic Forecast, which results in an even worse forecast. Moreover, this deviation may also be driven by political influences. The results of the project were published as a CESifo Working Paper at the end of 2018.

PROJECTS IN INEQUALITY AND REDISTRIBUTION

The Center also investigates trends in income and wealth distributions, as well as other indicators of inclusion and equal opportunity. Using a variety of econometric techniques, the Center conducts micro data analyses to explore trends in wealth and income distribution, and to identify the causal effects of tax and transfer policies.

Particular attention is devoted to the empirical analysis of equal opportunity and regional differences in inequality. In addition, researchers analyse potential

drivers of changing inequality like globalisation and demographic change, and especially the role of tax and transfer systems. Individual preferences regarding redistribution and attitudes toward “fair” tax systems are additional areas of research. Based on these studies, researchers provide policy advice for reforms of the tax and transfer system to improve equality of opportunity.

Projects in Detail

For the empirical analysis of equality of opportunity, we acquired two DFG grants for the period 2018–2021. In the first project, we teamed up with research partners from France, Sweden and Luxembourg to investigate the influence of unequal opportunities across the entire lifetime of individuals. Rather than focusing on a specific stage of adulthood, this project analyses how circumstances in childhood affect influential decisions that mark individuals’ transition to adulthood, and how these decisions translate into social and economic outcomes at later stages in life. We will simultaneously address these questions from intergenerational mobility and equal opportunity perspectives and draw on cross-country comparisons to identify the causal mechanisms via which social and economic advantages are transmitted from one generation to another.

In the second project, on which we will work with partners from Poland, the UK and Italy, we go beyond the conventional approach of treating income as the only outcome dimension of interest. It is widely acknowledged in the literature on this topic, and more so in practical decision-making, that well-being is a multidimensional concept that incorporates not just income, but also health, education and civic participation. Therefore, if the goal of public policy is to seek equality of opportunity, its measurement must account for the multidimensionality of well-being. To date, however, researchers studying equality of opportunity have made little progress in this respect – a shortcoming that will be addressed by this research project. To this end, we will investigate theoretical models of equality of opportunity with the goal of linking individual responsibility and multidimensional well-being and offering various measurement approaches to evaluating equality of opportunity in the presence of multiple outcomes. Furthermore, we will bring the developed measures to the data in order to assess equality of opportunity with respect to multidimensional well-being.

No simple linear relationship between uncertainty and sales growth

Tax policy affects income distribution

Our research on equality of opportunity has yielded scientific papers for publication in peer-reviewed journals.

In the first paper Paul Hufe and Andreas Peichl investigate the existence of unequal opportunities with respect to political participation in the US. While it is well documented that political participation is stratified by socioeconomic characteristics, an open question is how this finding bears on the normative evaluation of the democratic process. In this paper the authors draw on the analytical tools developed in the equality of opportunity literature to answer this question. They investigate to what extent differential political participation is determined by factors that lie beyond individual control, rather than being the result of individual choices. Using rich panel data from the US, they do indeed find a lack of political opportunity for the most disadvantageous types. Opportunity shortages tend to complement each other across different forms of participation and persist over time. They also find that family characteristics and psychological conditions during childhood emanate as the strongest determinants of political opportunities.

In a second paper, Paul Hufe and Andreas Peichl (together with Ravi Kanbur, Cornell University) acknowledge the multiplicity of normative ideals when evaluating the fairness of a given income distribution. More specifically, they reconcile the ideals of equal opportunities and absence of poverty from a perspective of inequality measurement. A remarkable advantage of their approach is its appeal to the measurement of unfair inequalities. They develop a family of measures of unfair inequality, which combine in essential fashion both inequality of opportunity and absolute deprivation. An empirical application of their approach yields strong upward corrections to inequality of opportunity based on quantifications of unfair inequality.

In a last contribution, Paul Hufe (together with Daniel Mahler, University of Copenhagen, and Paolo Brunori, University of Florence) proposes a set of new methods to estimate inequality of opportunity based on conditional inference regression trees. More specifically, the authors illustrate how these methods represent a substantial improvement over existing empirical approaches to measuring inequality of opportunity. First, they minimise the risk of arbitrary and ad hoc model selection. Second, they provide a standardised

way of trading off upward and downward biases in inequality of opportunity estimations. Finally, regression trees can be graphically represented; their structure is immediate to read and easy to understand. This will make the measurement of inequality of opportunity more easily comprehensible to a large audience. Furthermore, the use of cutting-edge machine learning methods contributes to ifo's efforts to incorporate methods from big data analysis into its methodological toolkit.

Further inequality-related research projects are currently in progress and have been presented at scientific conferences. Amongst others, Carla Krolage and Andreas Peichl (together with Daniel Waldenström, Research Institute of Industrial Economics, Stockholm) develop alternative measures for assessing top income shares to account for population and economic growth. Based on real and growth-adjusted income thresholds, as well as on fixed group size, these measures show that top income shares in the US have not been simply fanning out over time. Instead, the findings show diverging developments at the top, i.e. while the overall trends of Piketty and Saez (2003) are robust, there are some important qualifications. More specifically, when linking top incomes to productivity growth, they find sharper interwar drops in top shares and almost no increases at all after 1990. In addition, groups just below the very top experienced not only less income growth than those above them, but also benefited less than the upper middle class located just below in terms of income distribution. An analysis of pre-tax national account measures yields similar results.

In a project on wage inequality and the German minimum wage, Maximilian Blömer (together with Nicole Guertzgen, University of Regensburg and IAB, Laura Pohlen and Holger Stichnoth, ZEW, Mannheim, and Gerard van den Berg, University of Bristol) estimates an equilibrium search model using German administrative data and uses this for counterfactual analyses of a uniform minimum wage. The model with worker and firm heterogeneity does not restrict the sign of employment effects a priori and allows for different job offer arrival rates for the employed and the unemployed. They find that unemployment is a non-monotonic function of the minimum wage level. In the sample of low- and medium-skilled individuals, a minimum wage equivalent in real terms to the one actually introduced in 2015 raises the unemployment rate by 1.4 percentage points, an

Making inequality of opportunity easier to understand

Top income shares in the US have not been simply fanning out over time

increase of 13% vis-a-vis the old steady-state value. The researchers find that effects differ strongly by labour market segment. Cross-segment variation of the estimated effects is mostly driven by firm productivity levels, rather than by search frictions or the opportunity cost of employment. Detailed results were published as CESifo Working Paper No. 7160, 2018 and ZEW Discussion Paper 18-032.

ECONPOL EUROPE

EconPol Europe – The European Network for Economic and Fiscal Policy Research is a unique collaboration of nine policy-oriented university and non-university research institutes that contribute their expertise to the discussion of the future design of the European Union. In spring 2017, the network was founded by the ifo Institute together with eight other renowned European research institutes as a new voice for research in Europe. The ifo Institute was commissioned by the German Federal Ministry of Finance to set up this independent network devoted to research and to contributing its results to the economic and fiscal policy debate in Europe.

A new voice for
research in Europe



The founding members are:

- ifo Institute – Leibniz Institute for Economic Research at the University of Munich e.V. (ifo; Munich, Germany),
- Centre for European Policy Studies (CEPS; Brussels, Belgium),
- Centre d’Études Prospectives et d’Informations Internationales (CEPII; Paris, France),
- Institute for Advanced Studies (IHS; Vienna, Austria),

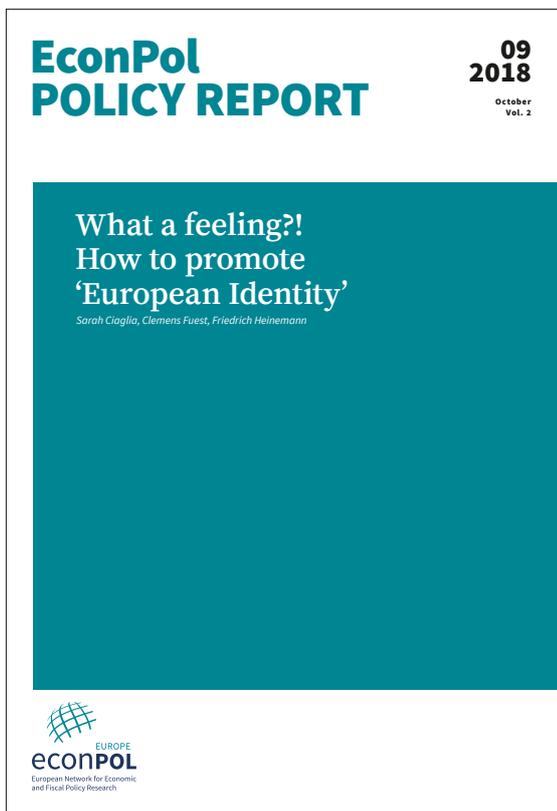
- Toulouse School of Economics (Toulouse, France),
- University of Oxford (Centre for Business Taxation) (Oxford, UK),
- Università di Trento (Department of Economics and Management) (Trento, Italy),
- VATT Institute for Economic Research (VATT; Helsinki, Finland), and
- ZEW – Leibniz Centre for European Economic Research (Mannheim, Germany).

The mission of EconPol Europe is to contribute its research findings to help solve the pressing economic and fiscal policy issues facing the European Union, and thus to anchor the European idea in the member states more deeply. Its task is also to transfer its research results to the relevant target groups in government, business and research, as well as to the general public, and to build a bridge between national and European policy debates.

With its cross-border cooperation on fiscal and economic issues, EconPol Europe aims to promote growth, prosperity and social cohesion in Europe and, in particular, to provide research-based contributions to the successful development of the European Economic and Monetary Union (EMU). Its tasks consist of joint interdisciplinary research in the following areas:

- sustainable growth and best practice
- reform of EU policies and the EU budget
- capital markets and the regulation of the financial sector
- governance and macroeconomic policy in the European Monetary Union

The network’s research results are disseminated through various EconPol Europe publication channels like working papers, policy reports, policy briefs and opinion pieces. In 2017, 6 EconPol Working Papers, 4 EconPol Policy Reports, 4 EconPol Policy Briefs and 5 EconPol Opinions were published. These publications discussed a variety of politically relevant topics, such as the future effects of Brexit on the European economy, macroeconomic imbalances and absorption channels of macroeconomic shocks in the Eurozone, reforms of the Common Agricultural Policy, debt rules in the Eurozone, or tax competition in Europe.



In addition to various academic workshops, lunch seminars and a parliamentary breakfast with members of the European Parliament, EconPol Europe organised the network's second annual conference in November 2018. The two-day conference focused on "International Trade and Protectionism". The conference brought together some 150 scientists, politicians, experts from national and European institutions and journalists to discuss current developments in international trade and other economic policy issues. The conference was structured as follows: The afternoon of 19 November 2018 was dedicated to a panel discussion on the challenges of trade policy in the European Union, followed by a speech by Maria Martin-Prat, Director of the European Commission's Directorate-General for Trade. Maria Åsenius, Head of the Cabinet of Commissioner Malmström, Bernd Lange, Chairman of the International Trade Committee of the European Parliament, Andrea Montanino, Chief Economist of Confindustria, and Eckart von Unger, Senior Manager, BDI (moderator: Sébastien Jean, Director CEPII), took part in the discussion. In the evening, Simon J. Evenett, University of St. Gallen, Gabriel Felbermayr, ifo Institute, Hylke Vanden-

bussche, Catholic University of Leuven, and Stefano Schiavo, University of Trento, addressed the issue of protectionism in a plenary session.

On Tuesday, 20 November, various sessions were held on the topics of migration, convergence and divergence in the EU, capital market regulation and many other current issues.

Service Functions

A key service function of the Center is conducting and interpreting business surveys. The regularly collected data not only constitute an integral part of the ifo Institute's economic forecasts; they also form the basis of industry and aggregate economic forecasts of businesses, industry associations and government agencies. The survey results are extensively discussed and interpreted in the media. In economic research, micro data derived from ifo business surveys play an important role in testing economic behavioural patterns – for example investment and employment behaviour, labour market trends or pricing policies. The Institute's excellent reputation in the area of Business Surveys is also confirmed by the fact that the surveying techniques developed at the Center are currently used in over fifty countries across the world. The regular surveys are also part of the harmonised European Commission Business Surveys Framework, from which the Center receives considerable funding. Each month the Center delivers parts of its aggregated survey results, which are then included in the European Sentiment Indicator.

The Center's economic forecasts are based on ongoing observation and analysis of economic developments, taking the survey results and the constructed indicators into special consideration. Numerous empirical models are used in its forecasts. For the short-term forecasts, approaches are typically applied that suitably compact and employ information from timely indicators in forecasting. Examples are bridge equations, vector-autoregressive (VAR) models, factor models and models of mixed frequencies. For a forecast horizon of over two quarters, more structural time-series methods and macroeconomic models are used. In recent years the Center has set up the so-called ifo-DGSE model for Germany, which simulates the German

Testing economic behavioural patterns using business survey data

economy as part of the euro area in the framework of an estimated micro-founded, structural multi-country model. This model is not only used for forecasting, but is also adopted in policy simulations.

To ensure that its economic forecasts are scientifically sound, the Center's models for the analysis and forecasting of business cycles are constantly examined with regard to their practical suitability. Based on the Center's own research, the models are regularly improved and new developments in forecasting methods are implemented.

Service Projects

The Center regularly carries out a number of service projects, based on its own research work and continuously monitored using scientific criteria. The most important projects are the ifo Business Surveys and the economic forecasts.

IFO BUSINESS SURVEYS

The business survey introduced by the ifo Institute in 1949 was an innovation in business-cycle and market observation. Today it is one of the most important sources for assessing the current economic situation in Germany. In 1990, shortly after the German Economic and Currency Union took effect, the business survey was expanded to include eastern Germany.

The monthly survey is based on roughly 9,000 responses from firms throughout Germany on how they see their business situation and related aspects of operational activities. The standard questions require firms to appraise their current situation and assess their business expectations and plans in the three to six months ahead. Survey participants are asked to exclude seasonal fluctuations from their assessments. As this is only partially possible, the results undergo an additional seasonal adjustment. The survey results, which are subject to a complex evaluation procedure, provide information on some 600 individual subsectors, the manufacturing industry, services, construction, as well as the wholesaling and retail industry.

The ifo Business Survey aims to capture the business-cycle component of macroeconomic develop-

ments. It does not predict long-term growth trends. The ifo Business Survey is designed to supplement official statistics. It provides information on economic phenomena that are not ascertained by official statistics, and is published in a timely manner.

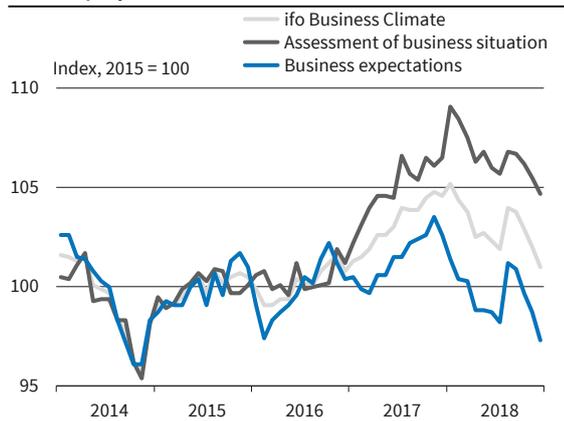
The long time series of the ifo Business Survey is used to derive informative business-cycle indicators. The ifo Business Climate Index, combined with quarterly questions on capacity utilisation and order stocks, provides a reliable picture of the current business situation and short-term developments. A key advantage of ifo's economic indicators vis-à-vis the official statistics are their early availability. Official German production and new-order indicators are generally not published until four weeks after the end of the reporting period, and are often subject to major revisions. The results of the ifo Business Survey are released between the 22nd and 27th day of the survey month. Furthermore, participants give their appraisal of and expectations for their firms, thereby offering supplemental information to the quantitative information provided by the official statistics.

External individuals interested in the time series of the ifo Business Survey can obtain data from the ifo Institute's database service. The data offered also include time series from other sources.

IFO BUSINESS CLIMATE GERMANY

The ifo Business Climate, which is calculated as the transformed mean of the balances of the business situation and expectations for the next six months, has been published regularly by the ifo Institute since 1972. Since April 2018 it has been published as ifo Business Climate Germany, which now also covers the service sector. It has proven to be a reliable early indicator of economic development in Germany. Compared to the production index for manufacturing industry provided by official statistics, it leads, on average, by two to three months. As a result, it has become an integral part of German economic forecasts. The national and international importance of the ifo Business Climate can be seen in the reactions to the publication of the new forecast by financial markets, which eagerly await its results every month. The ifo Institute provides special monthly ifo Business Survey evaluations and commentaries for Bavaria, Baden-Württemberg, North Rhine-Westphalia and Saxony.

ifo Business Climate for Industry and Trade^a
Seasonally adjusted

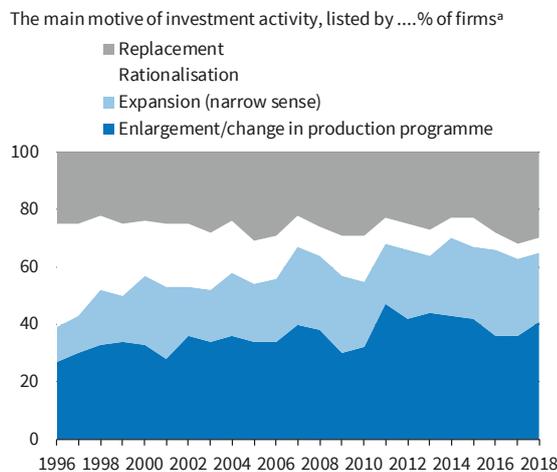


^a Manufacturing, service sector, trade and construction.
Source: Ifo Business Survey, December 2018. © Ifo Institute

IFO INVESTMENT SURVEY OF MANUFACTURING INDUSTRY

The Ifo Investment Survey was the forerunner of all of the German Federal Statistics Office’s investment surveys. Today it supplements official ex-post data with timely information on projections based on company plans. This makes the Ifo Institute the only source of quantified estimates of current developments in investment prior to the publication of official ex-post

Changes or Expansions of the Production Programme Dominate



^a Responses from manufacturing, weighted with company turnover.
Status: Spring of preceding year; 2018 provisional.
Source: Ifo Investment Survey. © Ifo Institute

data. As a voluntary survey – the Ifo Investment Survey is like all non-official surveys and is not grounded in law – it cannot essentially replace a comprehensive survey. This is especially true with respect to the desired subdivision of the sectors.

IFO INVESTMENT SURVEY OF LEASING

With its business survey of the leasing sector the Ifo Institute closes a statistical gap. Unlike in other areas of the investment survey, this is a comprehensive survey, as there are no official statistics for the extrapolation of sample results. It has been conducted in cooperation with the Berlin-based German Association of Leasing Companies every October since 1977. At the end of the year the results are presented in the *Ifo Schnelldienst* and a comprehensive leasing report. The latter comprises the size and kind of the investment, as well as the distribution across sectors.

IFO INSURANCE SURVEY

In close collaboration with the Federation of the German Insurance Industry, the Ifo Institute has been conducting a quarterly business survey for the insurance sector since the end of 1999. Included in the survey are insurance companies in the areas of life, health and property/casualty. In terms of gross premiums, the insurance companies participating in the survey cover over 75% of the premium income.

IFO WORLD ECONOMIC SURVEY (WES)

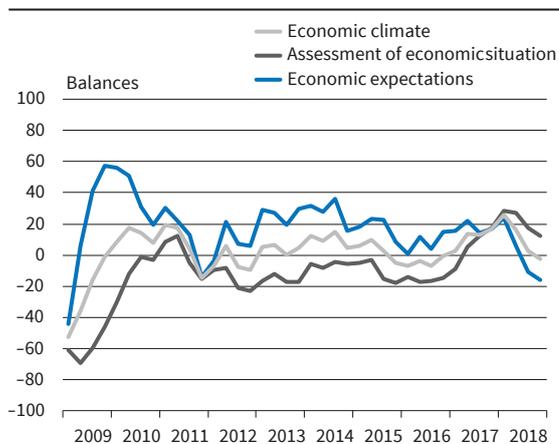
For over 30 years the objective of the Ifo World Economic Survey (WES) has been to depict the current economic situation and outlook in numerous industrial, emerging and developing countries as accurately as possible. The survey results are characterised by their timely information and international comparability. The assessments and expectations of on-site experts are particularly valuable in countries where the official statistics remain unreliable. The figure below shows the high correlation of the survey results with actual growth in the world economy.

Timely information and international comparability

In 2018, the Ifo Institute also polled over 1,200 international business experts at research institutes or multinational enterprises on the economic situation and outlook in some 120 industrial, emerging and developing economies. In return, participants received detailed survey results. The WES results are also published in the quarterly English-language journal *Ifo*

World Economic Survey, and in a condensed form in German in the *ifo Schnelldienst*. In Latin America the ifo Institute has cooperated with Fundação Getulio Vargas/ Instituto Brasileiro de Economia (FGB/IBRE) since 2007, which publishes the WES results for this region.

ifo World Economic Climate



Source: ifo World Economic Survey (WES) IV/2018. © ifo Institute

LOGISTICS INDICATOR

The Logistics Indicator is conducted on behalf of Bundesvereinigung Logistik (BVL) within the context of the Institute’s economic surveys. The objective is to gain a timely insight into developments in the logistics industry. Monthly replies from over 4,300 companies participating in the survey are used to answer questions about the current situation and expectations for the months ahead. In addition to logistics service providers, users of logistics services are surveyed and summarised in the overall aggregate of the logistics industry. The results are available for the period from 2005 in a seasonally adjusted form. The results are commented and illustrations are created on a quarterly basis. The results and the comments will be published on the BVL website.

DATABASE FAMILY BUSINESS FOUNDATION

The aim of the cooperation between the Stiftung Familienunternehmen and the ifo Institute, which has existed since 2017, is to build up a comprehensive company database on the basis of scientific methods and findings. In the future this database will develop into one of Germany’s leading and internationally renowned data sources for scientific research relating to the activities

of family businesses. The basis for the development of the enterprise database are inter alia firm and individual data from representative enterprise surveys, information from public annual accounts and data from official statistics. The creation of a family business panel and a corresponding control group should enable the analysis of family businesses in comparison to non-family businesses with regard to their economic significance and economic activities. As part of this project, the ifo Institute also produces the “Jahresmonitor der Stiftung Familienunternehmen” on an annual basis. To this end, a representative company survey of current and relevant issues is carried out, which enables the analysis of the economic developments of family businesses. In 2017, both family and non-family enterprises in Germany were surveyed on their investment activities in the course of the company survey for the “Jahresmonitor der Stiftung Familienunternehmen”. In total, the survey provided information on the investment behaviour of around 1,500 German companies. This year’s report is based on a survey conducted between April and July 2018, in which around 1,300 family and non-family enterprises from Germany took part, and deals with international tax competition from a business perspective.

IFO ECONOMIC FORECASTS

Four times a year, the Center publishes a detailed report on the German economy that includes forecasts of gross domestic product (sector origin, use and distribution), the labour market, inflation, as well as public expenditure and revenues. Thanks to the German economy’s strong links with the world economy, and in particular with the European economy, a forecast is also made for the European Union and other important countries. A well-founded analysis of the economic situation forms the basis of the forecast. Special attention is paid to quantifying the dynamics of economic activity, and to identifying business-cycle turning points. Since 2010, the Center has also provided annual sector accounts for institutional sectors, the economy as a whole, non-financial and financial corporations, private households (including non-profit organisations), the government sector, as well as for the rest of the world. The accounts provide a systematic overview of important transactions between sectors that are included in the overall economic figures.

The Center frequently makes statements to the media on the current economic outlook and the economic

Surveying providers and users of logistics

policy problems related to it. The economic implications of fiscal and monetary policy decisions are also analysed and commented upon.

JOINT ECONOMIC FORECAST

In spring and in autumn the Center, together with the department for business cycle research of the ETH (Swiss Federal Institute of Technology) Zurich (KOF), participates in the Joint Economic Forecast (Gemeinschaftsdiagnose). In June 2018 a new two-year contract was awarded to the ifo Institute by the German Federal Ministry for Economic Affairs and Energy. The other four successful consortia were the German Institute for Economic Research (DIW), the Halle Leibniz Institute for Economic Research (IWH), the RWI – Leibniz Institute for Economic Research, Essen, together with the Institute for Advanced Studies in Vienna (IHS), as well as the Kiel Institute for the World Economy (IfW). The Joint Economic Forecast comprises forecasts for Germany, the European Union and other major countries, as well as an evaluation of those economic policies that affect Germany's economic activity. It is presented at the facilities of the federal press conference (Bundespressekonferenz) in Berlin, and subsequently submitted to the German Federal Ministry for Economic Affairs and Energy.

EUROZONE ECONOMIC OUTLOOK

The Eurozone Economic Outlook is a European joint initiative of the ifo Institute, KOF in Zurich and Istat in Rome. It provides an estimate (for the past quarter) and a forecast (for the current and following quarters) of real GDP, private consumption, industrial output and inflation in the Eurozone. Forecasting is primarily conducted by applying econometric forecasting methods. The projections are then rounded off using the personal appraisals of the project team. The Eurozone Economic Outlook is published quarterly – in January, April, July and October – as a two-page press release in German and English.

EUROPEAN ECONOMIC ADVISORY GROUP (EEAG)

The European Economic Advisory Group at CESifo (EEAG) is a European expert advisory board consisting of seven well-known economists from seven countries and currently chaired by Giuseppe Bertola (Università di Torino). It was launched in 2001 by CESifo. The group writes detailed reports on specific economic policy issues. The Center provides a forecast and analysis of

economic activity in Europe and the world for the EEAG Report. Special matters are also treated on a regular basis. The forecast is part of the “Economic Outlook” chapter.

ECONOMIC ANALYSES, PREPARATION OF INDICATORS AND FORECASTS

The project aims to compute monthly, survey-based electricity indicators to forecast electricity consumption in Germany and in the EnBW customer base; and to build an appropriate econometric model to predict the target time series over a forecast horizon of up to 12 months. The electricity indicators will be generated from the disaggregated results of the ifo Business Surveys of the manufacturing industry and reflect cyclical variations in power demand. The forecasting model is based on the idea of improving predictive accuracy by combining a larger number of individual forecasts and models not only of business cycle fluctuations, but also the medium-term trend, seasonality, temperature and structural effects of electricity demand. Additionally, this project includes consulting services connected with the current state of the business cycle and economic policy issues.

Forecasting
electricity
consumption

Service Projects in Detail

ifo Business Survey

K. Wohlrabe, P. Brandt, L. Dorffmeister, S. Sauer, S. Rumscheidt, S. Litsche, A. Bauer, F. Leiss, monthly publication in *ifo Schnelldienst* and *ifo Konjunkturperspektiven*.

ifo World Economic Survey (WES)

K. Wohlrabe, J. Garnitz, D. Boumans, J. Nothhaft, quarterly publication in *ifo World Economic Survey* and *ifo Schnelldienst*.

ifo Investment Survey in Leasing

A. Städtler, S. Rumscheidt, regular publication in *ifo Schnelldienst*.

ifo Business Survey of the Insurance Sector

S. Litsche for the Association of German Insurance Companies, information for clients and participants.

Profit Situation and Trends

S. Litsche, biannual determination of the profit situation and trends in the metal and electric industry.

ifo Business Survey for Bavaria

P. Jäckel, F. Leiss for the Bavarian Ministry of Economic Affairs, Regional Development, Energy, regular publication in *Konjunktur in Bayern* as well as on the client's website.

ifo Business Survey for Baden-Württemberg

S. Litsche for Landeskreditbank Baden-Württemberg – Förderbank, regular publication in the series *L-Bank-ifo-Konjunkturumfrage* and on the internet <http://konjunktur-bw.de>.

ifo Business Survey for Saxony

M. Weber, regular publication in *ifo Dresden berichtet*.

ifo Business Survey for North Rhine-Westphalia

A. Weichselberger for NRW Bank, regular publication in the series *NRW.Bank.ifo-Index* and on the internet.

ifo Investment Survey Manufacturing Industry

A. Weichselberger, regular publication in *ifo Schnelldienst*.

ifo-KfW Business Cycle Barometer for Medium-sized Businesses

S. Sauer, for the KfW Bank Group, regularly published by the client.

ifo Employment Barometer

K. Wohlrabe, A. Bauer, monthly publication in *Handelsblatt*, *ifo Konjunkturperspektiven* and on the internet.

ifo Export Expectations

K. Wohlrabe, monthly publication as a press release and on the internet.

ifo Managers Survey

K. Wohlrabe, for *WirtschaftsWoche*, regular publication in *WirtschaftsWoche* and on the internet.

Database Family Business Foundation

A. Rathje, U. Hannich, K. Wohlrabe, for Stiftung Familienunternehmen, regular publication in *Jahresmonitor Stiftung Familienunternehmen* and on the internet.

Calculation and projection of the productivity and innovation gaps of the German federal states

R. Lehmann together with ifo Dresden, for *Bertelsmann Foundation*, project period: June 2018 to September 2018, it is intended to publish the project in the series *ifo Forschungsberichte*.

Brexit and the Economic Consequences for the German State of Bavaria and Upper Bavaria

R. Lehmann together with G. Felbermayr and M. Steininger, for *Chamber of Commerce and Industry for Munich and Upper Bavaria*, project period: August 2018 to December 2018, there are plans to publish the project as an IHK study.

Brexit and its Economic Consequences for the German State of Hesse

R. Lehmann together with G. Felbermayr and M. Steininger, for *Chamber of Commerce and Industry Frankfurt am Main*, project period: March 2018 to April 2018, the study was published as *ifo Forschungsberichte* 93.

ifo Center for International Institutional Comparisons and Migration Research

Institutions are important for long-term economic growth and equality of opportunity. The ifo Center for International Institutional Comparisons and Migration Research aims to address various societal challenges by analysing the causes and economic impacts of institutions, with a special focus on migration, financial intermediation and how beliefs and preferences interact with institutions. With its publication of the ifo DICE Report and the CESifo Forum, as well as the maintenance and development of DICE (Database for Institutional Comparisons in Europe), the Center fulfils key service tasks for academia and the general public.

DICE DATABASE AND THE JOURNAL IFO DICE REPORT

Against the background of recent economic, political and societal challenges, there is a growing need for information on differences in institutional regulations. The Center's research questions focus on how respective national regulations differ within the EU, as well as worldwide.

With its unique DICE Database, the ifo Institute does a great deal to close this information gap. DICE offers users one-stop-shop access to quantitative and qualitative information on institutions, which is compiled from numerous sources and can be linked to other economically relevant indicators. The database addresses a wide range of users and is accessible free of charge. The database currently covers the following topics: banking and financial markets, business, education and innovation, energy, resources and natural environment, infrastructure, labour market, migration, public sector, social policy and values. At present, the database contains around 3,800 entries.

It is closely linked to the *ifo DICE Report – Journal for Institutional Comparisons*. This quarterly journal analyses institutions, regulations and economic policy approaches across countries. Its editors are Marcus Drometer, Yvonne Giesing, Christa Hainz and Till Nikolka. In the "Forum" section of the journal, a selected topic is covered by several authors from different perspectives. The ifo DICE Report also features the following sections: "Research Report", "Reform Model", "Database" and "News".

CESIFO FORUM

CESifo Forum includes contributions from internationally renowned authors on policy issues of worldwide interest, as well as data and information from the ifo Institute. This English-language journal is published on a quarterly basis by CESifo GmbH and edited by Chang Woon Nam.

RESEARCH

The Center's research can be divided into four areas. The **first research area studies migration and institutions**, with a focus on migrant self-selection and integration. Five papers on self-selection were completed for submission in 2018. One paper analyses couples' emigration decisions and a second examines return migration decisions of families who previously migrated to Denmark. A third paper covers international spillover effects of family reunification rules, a fourth looks at emigration motivation and the earnings of Danish emigrants, while a fifth paper co-authored with EconPol partner VATT tests the extent to which international migrants select themselves into different destination countries based on their attitudes towards redistribution. The research on refugees includes a field experiment with a researcher from EconPol partner CEPS on how to foster the labour market integration of refugees. One paper on this topic has already been submitted. Another paper studied how refugees who arrived in transit countries in 2015 and 2016 were self-selected. A project conducted in collaboration with researchers from Uppsala University uses geo-coded register data from Sweden to study the effect of allocating refugees to individual neighbourhoods. Two papers on the implications of EU enlargement for firm productivity and innovation in sending and receiving countries were finished and submitted. A new DFG project analyses language learning and migration intentions. Another new project (with EconPol partner VATT) analyses self-selection of emigrants from Finland.

In the **second research area of migration and political economy**, the project on how bitterness in life affects concerns over immigration was completed with a publication in 2018. A paper co-authored with EconPol partner CEPII that studies the role played by immigration in the electoral success of extreme parties in French presidential elections for the years 1988 to 2017 was revised and resubmitted. Further papers deal with the interplay between political economy and migration policy. Turning to the US, another study examines whether naturalisations are used strategically by governments to increase their re-election probability. This paper was revised and resubmitted in 2018. A second project analyses how the number of asylum applications and the rejection of these applications change before and after elections in the European Union. Finally, another project deals with the question of how the emergence of immigration-critical parties affects the decision of migrants to migrate to a particular country.

Migrant self-selection and integration

Role of immigration in electoral success of extreme political parties

Government
guarantees and
risk-taking behaviour
in banks

The **third research area of institutions and financial intermediaries** studies the impact of institutional regulations on financial intermediation. One paper analyses how the removal of a government guarantee influences banks' risk-taking behaviour. This paper has been submitted to a journal. In a related project, the effect on the real economy is studied, and the different ways in which access to credit is measured are compared. This project analyses how a firm's perception of aggregate bank lending policy depends on its individual credit market experience. The insights gained from this research were used to rephrase the question on credit access in the business expectations survey. A paper that analyses the decision-making rules underlying the monetary policy decisions of the European Central Bank was published in 2018.

In the **fourth research area on institutions and society**, a paper that analysed household saving and investment behaviour during political instability in a developing country was published. A research project on target-specific beliefs and redistributive preferences offers insights into both perceived equality of opportunity and its political consequences. A paper on this topic was accepted for presentation at the American Economic Association annual conference in January 2019. A completed project identifies the role and characteristics of individual volunteers engaged in the German refugee crisis of 2015/16, and measures the resulting savings in local government expenditure. Another paper investigates the effect of fiscal consolidations on the current account in the OECD countries. Furthermore, a paper on the causes of urban decline in eastern German mid-sized cities and their differentiated resurgence strategies is in the revision process.

INTERNATIONAL ADVISORY AND RESEARCH PROJECTS

The ifo Center for International Institutional Comparisons and Migration Research participates in various interdepartmental international consulting and research projects. The focus here is on the evaluation and analysis of economic risks, as well as on institutional reforms.

Projects Completed in 2018

Practical Experiences with the Exemption Provisions § 2a – § 2c VermAnlG of the Small Investor Protection Act since 1 June 2016

C. Hainz, S. Reiter in cooperation with L. Hornuf, University of Bremen, for the German Federal Ministry of Finance, March 2018 to October 2018.

What experience have crowd investing portals, issuers and investors had over the last two years with the exemption regulations of the Small Investor Protection Act introduced in Germany in July 2015. On behalf of the German Federal Ministry of Finance, the project team is conducting an empirical survey to examine experiences with the Small Investor Protection Act. They use existing databases and develop questionnaires for this purpose.

The regulation of start-up companies often leads to a conflict of objectives. On the one hand, legislators want to protect investors from fraudulent activities in the capital market. To this end, issuers must make information available to potential investors and are subject to far-reaching regulation. However, the provision of information and compliance with the relevant laws are associated with high costs, especially for young companies. On the other hand, the government is aware of the financing difficulties of young companies. For this reason, it has created exemption provisions aimed at the special needs of start-up companies.

For the period since June 2016, the study examines whether crowdfunding is carried out with or without a securities prospectus, to what extent defaults have already occurred, which type of financial products are used, which investor structure exists and how the portals have reacted to the new exemption provisions. In addition to the classical crowdfunding of companies and real estate, the financing of social and charitable projects is also examined.

Economic Advantages of Free Movement of Goods

P. Poutvaara, C. Rhode, T. Stitteneder, M. Valeyathepillay for the European Parliament, Brussels, June 2018 to October 2018.

This project conducts an evaluation on the economic advantages of the free movement of goods in the Euro-

Resurgence strategies
after urban decline

pean Single Market. The scope of the research is to focus on economic achievements and the potential of the European Single Market as a growth engine. The results presented show that the Single Market has enjoyed substantial benefits in terms of trade flows, output and income per capita. However, there is substantial variation in the size of gains, meaning that small member states and Eastern European countries benefit the most.

Optimising the Recruitment and Residence-Permit Procedures of Qualified Professionals from Third Countries

P. Poutvaara, C. Rhode, T. Stitteneder for the Chamber of Commerce and Industry for Munich and Upper Bavaria, August 2018 to November 2018.

Due to the growing shortage of skilled workers, the recruitment and immigration of qualified workers from third countries is increasing in importance. In practice, however, the matching of employers and skilled workers, as well as the immigration process – including various procedural steps – prove challenging.

In this study, a status quo analysis and problem description was formulated for the subprocesses of recruitment and residence (visa) procedures, which highlights existing support structures, individual procedural steps and the actors involved, taking into account the legal framework. Concrete recommendations and steps for optimisation were developed for the resulting problem areas. Recommendations regarding the recruitment process consist of the expansion of a central information platform, which is supplemented by further advisory services, and the creation of a “matching pool” to improve matching between employers and specialists. Further digitalisation, an inter-agency IT platform and a systematic analysis of current processes are proposed for the processing of visa applications.

Development of a Steering Mechanism for Potential-orientated Migration of Qualified Professionals

T. Nikolka, P. Poutvaara, C. Rhode, T. Stitteneder for the IHK for Munich and Upper Bavaria, October 2018 to December 2018, publication in *IHK Impulse für die Wirtschaftspolitik*, 2018.

In international competition for qualified specialists, traditional immigration countries such as Australia, Canada and New Zealand also rely on potential-orient-

ed migration channels. These channels facilitate the immigration of skilled workers, even if there is no binding job offer. As a rule, this migration channel is implemented as a points system, the criteria for which vary from country to country.

The study proposes a concept for controlling potential-oriented immigration in Germany that ensures that a certain number of skilled workers can enter Germany to look for work. On the basis of the “3 Plus” principle, particular consideration is given to those candidates who, in addition to the three necessary basic prerequisites, also have the best integration prospects in the German labour market.

Labour Market Integration of Refugees in Germany: Evidence from a Field Experiment

M. Battisti, Y. Giesing in cooperation with N. Laurentsyeva, CEPS, Brussels, ifo Project partly financed by the Mercatorstiftung and the University of Munich, January 2015 to December 2018.

Between 2015 and 2016, over one million refugees arrived in Germany. Their labour market integration is challenging for several reasons: their lack of job-related skills (including language), qualifications, and task-specific human capital have hindered refugees' labour market integration. Moreover, matching frictions, a suboptimal network, residency requirements and legal barriers may be larger than for natives or other migrants.

We designed a randomised controlled trial to evaluate the role of matching frictions for the employment prospects of refugees. In a first step, we conducted personal interviews with approximately 400 job-seeking refugees in Munich and collected data on their job search behaviour, their job expectations and experiences, their education, skills and social integration. We subsequently provided all participants with a German CV and basic job search information. In a second step, we randomly selected half of the participants and added them to the database of an NGO that sends CVs directly to employers. This intervention aims to isolate the effect of matching and information frictions, while having no effect on the underlying skill set of refugees. Results of follow-up telephone surveys show a positive and significant treatment effect of 13 percentage points on employment after twelve months. These effects are concentrated among poorly educated refugees and those facing uncertainty about their residence status. These individuals

Points systems for migration

How to integrate refugees into the labour market

may not search effectively, could lack access to alternative support programmes, and may be disregarded by employers due to perceived higher hiring costs.

DICE: Database for Institutional Comparisons in Europe

C. Hainz, P. Poutvaara, C. Rhode, T. Stitteneder.

In the process of the DICE relaunch, the Center conducted an in-depth user needs analysis. Based on its findings, a new DICE concept was developed, which entails a new IT infrastructure, as well as content development. The partially heterogeneous needs of the different target groups are met by an innovative web interface with novel functionalities.

Database with innovative web interface

ifo DICE Report

M. Drometer, C. Hainz, Y. Giesing, T. Nikolka, C. Rhode, T. Stitteneder.

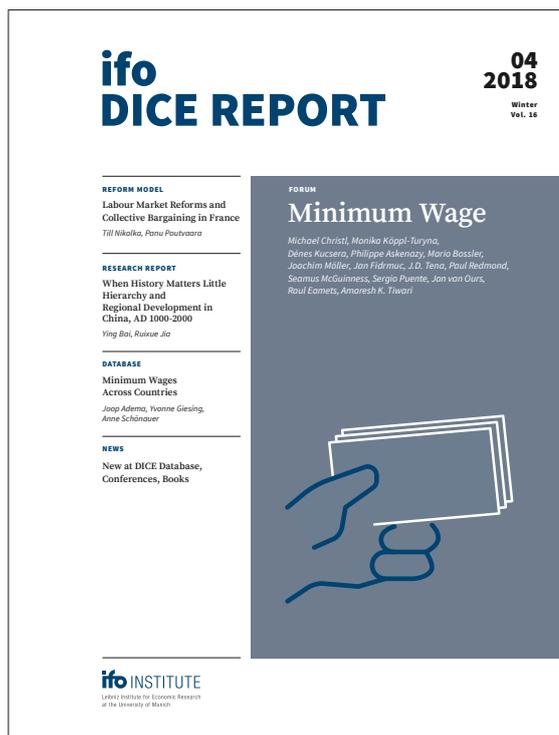
In 2018 the “Forum” section of the ifo DICE Report discussed the following topics: labour migration, wealth taxation, the sustainability of the euro and minimum wages. The “Research Reports” and “Reform Models” rubrics are not thematically defined, but again, they always cover country comparisons of the organisation

of economically relevant institutions. The “Database” section highlights and introduces new entries in the DICE database. ifo DICE Report articles can be downloaded from the CESifo homepage.

CESifo Forum

C.W. Nam.

In 2018, the “Focus” section of CESifo Forum addressed the following topics: EU cohesion policy, income inequality in the EU, unconditional basic income and Chinese foreign direct investment in the EU. CESifo Forum articles can be downloaded from the CESifo homepage.



Current Projects

Transparency – Tax Secrecy By International Comparison

C. Fuest, M. Drometer, C. Rhode, T. Stitteneder for the Foundation for Family Businesses, Munich, September 2018 to January 2019.

This ifo study analyses the extent to which companies are required to publish information on their business activities and their economic success. In particular, we focus on the EU accounting guidelines and country-by-country reporting. We also study the publication of individual income and tax data in Scandinavian countries.

Language-Skill Investments and Migration Decisions

P. Poutvaara, T. Nikolka, in cooperation with ifo research professor S. Übelmesser, M. Huber, University of Jena, sponsored by the Deutsche Forschungsgemeinschaft (DFG), Bonn, March 2018 to March 2020.

This project collects survey data in several countries on adult-age language learning and migration intentions, as well as motives for language learning and migration intentions. A survey of language course participants in Goethe Institutes in different countries was conducted in 2018, an online questionnaire for university students was also completed, and a survey will be implemented. Together, the two surveys shed light on language learning and migration decisions. They also highlight the role played by labour market and family considerations, as well as preferences concerning institutional factors and social norms, especially in terms of gender norms, in migration decisions. The project results will contribute to a better understanding of the characteristics and motives of potential migrants, and will allow policymakers to design immigration and integration policies taking these factors into account. There are four paper projects: the first focuses on the motives of language learning, the second studies migration intentions, the third analyses the role of internationally applicable qualifications compared to country-specific ones for migration (intentions) and the fourth studies the investment decisions in language skills in the presence of potentially gender-specific migration incentives. The data collected will allow further analysis beyond these papers in the future.

Analysis of Internal Migration Responses to Refugee Placement and Local Electoral Outcomes

M. Valeyatheepillay, ongoing doctoral project.

In a first subproject, Swedish geo-coded data is used to empirically evaluate the success or failure of refugee placement policy in terms of neighbourhood integration and dynamic sorting following the initial refugee placement. The project examines how integrated the refugees are in terms of their individualised neighbourhood, and investigates their subsequent moves and sorting among short- and long-distance subsequent movers.

In a second subproject, Swedish geo-coded data and electoral data are used to analyse the extent to which electoral outcomes, and more specifically, the success of an anti-immigration party, affected migration responses and ethnic segregation of immigrants, and how these migration responses depend on the initial allocation. A third subproject will analyse the effects of elections on educational attainment and the labour market integration of refugees and their children.

The data allows us to identify k-nearest neighbourhoods, calculated at the 50 and 500 closest neighbours; and to measure the different neighbourhood attributes using scales and shapes that suit the attributes best and, as such, create individualised neighbourhoods. This is particularly important as the nearest neighbours are the individuals that the refugees have a higher likelihood of meeting and will therefore have an effect on the integration of newly arrived refugees.

Interaction between Institutions and Financial Markets

S. Reiter, ongoing doctoral project.

In a first subproject, micro data collected by the Austrian Central Bank (OeNB Euro Survey) is used to empirically investigate the relationship between home ownership and access to credit in Central, Eastern, and Southeastern Europe. The research project is conducted together with Dr. Christa Hainz (ifo Institute) and Prof. William Pyle, Ph.D. (Middelbury College).

Emigration Choices over the Skill Distribution

B. Rude, ongoing doctoral project.

Neighbourhood integration after refugee placement

Access to credit related to home ownership

This Ph.D. project investigates which characteristics and skills drive migration decisions. To this end, Finnish population data is analysed in cooperation with researchers from Finland and England.

ifo Center of Excellence for Migration and Integration Research (CEMIR)

P. Poutvaara, G. Felbermayr, H. Rainer, L. Wößmann, M. Drometer, M. Burmann, Y. Giesing, T. Nikolka, M. Valeyatheepillay, M. Battisti, J. Saurer, M. Piopiunik in cooperation with the ifo research professors G. Borjas, Harvard University, Cambridge MA., and G. Peri, University of California, Davis.

CEMIR brings together migration research from different ifo Centers while providing a forum for migration research beyond the Institute. In 2018, CEMIR organised a series of Lunchtime Seminars to provide ifo postdoctoral and doctoral students and external guests the opportunity to present their latest research. It also organised a Junior Economist Workshop in June. CEMIR continues to foster collaboration within the Institute and with external researchers. Till Nikolka has worked together with researchers from Uppsala University in a project analysing the spillover effects of national immigration policies to a third country. Yvonne Giesing conducted a field experiment to study the labour market integration of refugees together with Michele Battisti (former ifo Center for International Economics, now University of Glasgow) and Nadzeya Laurentsyeve (CEPS and LMU Munich). CEMIR researchers contributed to the migration debate at various conferences and events and in the media, including a joint article by two Center Directors in *Die Welt*.

DICE Database for Institutional Comparisons in Europe and ifo DICE Report – Journal for Institutional Comparisons

M. Drometer, C. Hainz, Y. Giesing, T. Nikolka, P. Poutvaara, C. Rhode, T. Stitteneder.

The new DICE database is more user-friendly and contains extensive features, such as options for graphical visualisation and a sign-in function. The user experience is not only optimised by a modern interface and extensive features. Rather, DICE offers a remarkably flexible database structure, which allows users to create and process their own datasets. An in-depth collaboration with experts from other research areas should continue to ensure the highest

data quality. DICE 2.0 will be available to end users by spring 2019.

The publication of the ifo *DICE Report – Journal for Institutional Comparisons* will be continued. The journal provides comparative analyses of institutions, regulations and economic policy approaches across countries. It combines cutting-edge research with actual economic policy issues and provides input for the DICE database.

CESifo Forum

C.W. Nam.

The Center will continue to publish the CESifo Forum journal. Apart from the crucial issues related to the European integration and the future of the EU, CESifo Forum also aims to focus on current economic topics of worldwide interest from a European perspective.

Spillover of national immigration policy to third countries

ifo Center of Excellence for Migration and Integration Research – CEMIR

The ifo Center of Excellence for Migration and Integration Research (CEMIR) was established in January 2012, and until December 2015 it was funded by the Leibniz Association project “Optimal Immigration Policies in Europe: From Conflicting Interests to Mutual Gains (SAW-2012-ifo-3)”. CEMIR brings together expertise from four ifo research centers – the ifo Center for International Institutional Comparisons and Migration Research, which is responsible for coordinating CEMIR, the ifo Center for the Economics of Education, the ifo Center for International Economics, and the ifo Center for Labour and Demographic Economics. The research conducted in these Centers analyses migration and integration from the different perspectives of labour economics, international economics, public economics, and education economics. CEMIR’s research helps to answer the question of how recipient countries’ welfare state and labour market institutions, as well as their immigration policies, should ideally be designed so that migration can unlock mutual benefits for all parties involved. CEMIR also analyses questions related to the integration of immigrants, with a special focus on refugees. Through research, scientific conferences and discussion events, CEMIR aims to provide scientific information to influence the debate over migration in a German and European context.

In CEMIR, the directors of the four ifo Centers in question, Panu Poutvaara, Ludger Wößmann, Gabriel Felbermayr and Helmut Rainer, worked together in 2018 along with the ifo researchers Marcus Drometer, Yvonne Giesing, Till Nikolka, Britta Rude, Madhinee Valeyathepillay (ifo Center for International Institutional Comparisons and Migration Research), Marc Piopiunik (ifo Center for the Economics of Education), and Judith Saurer (ifo Center for Labour and Demographic Economics). They worked in cooperation with a range of external researchers, including the ifo research professors George Borjas (Harvard University, Cambridge MA), and Giovanni Peri (University of California, Davis), as well as the researchers Ilpo Kauppinen (VATT Institute for Economic Research, Helsinki), Romuald Méango (Munich Center for the Economics of Ageing), Matz Dahlberg (Uppsala University), Martin David Munk (Aalborg University), Anthony Edo (CEPII), Nadzeya Laurentsyeva (CEPS), and Cevat Giray Aksoy (European Bank for Reconstruction and Development).



Center of Excellence
for Migration and Integration Research

As in previous years, CEMIR organised a junior economist workshop and a Lunchtime Seminar series, at which ifo researchers and external guests presented their work.

Research Group Taxation and Fiscal Policy

Tax and fiscal policy consulting

The Research Group “Taxation and Fiscal Policy”, headed by Clemens Fuest was created in October 2016. It currently consists of two Ph.D. students, one postdoctoral researcher and one senior economist (50%), who carry out research projects and engage in policy consulting with a focus on the area of taxation and fiscal policy. Taxation, government debt and public spending are key areas of public policy. They play a role in nearly all areas of government activity, and they affect allocative efficiency, the distribution of income and the stability and sustainability of economic development. The Research Group “Taxation and Fiscal Policy” therefore pays particular attention to the following issues:

INTERNATIONAL TAXATION

Growing global economic integration along with the further liberalisation of international capital flows have increased the relevance of international tax matters and intensified tax competition. Reports about multinational enterprises that reduce their tax burden by shifting profits from high-tax to low-tax countries have triggered an intense public debate. These developments have led to calls for more coordination of tax policy both at the EU level and internationally. The Research Group contributes to this debate by analysing tax competition and tax avoidance as well as proposals for tax coordination, tax harmonisation or the introduction of new tax instruments.

TAXATION, FISCAL POLICY, AND INEQUALITY

In recent years the distribution of income and wealth has attracted increasing attention in public debates. The Research Group contributes to this debate by studying the incidence of taxation and the impact of taxes and public spending on inequality. The Research Group also analyses the regional distribution of income and its determinants in Germany. In this context, it examines issues like the impact of globalisation on the income distribution, as well as the effects of economic policy reforms. In addition, the Research Group studies various aspects of the economic, political, and social consequences of inequality.

FISCAL POLICY AND GOVERNANCE IN THE EUROPEAN MONETARY UNION

The recent economic and financial crisis has put public finances in several EU member states under tremendous pressure and raised concerns about the solvency

of sovereigns. The resulting sovereign debt crisis has constrained fiscal capacity substantially and triggered heated debates about the future institutional setup of the Eurozone. The Research Group studies the development of fiscal policy in the Eurozone and beyond and contributes to the discussion about reforms of Eurozone governance. The Research Group also analyses the development of the EU budget and makes proposals for reforming it.

Projects Completed in 2018

Convergence in EMU: What and How?

M. Dolls, C. Fuest, C. Krolage, F. Neumeier, D. Stöhlker for the European Parliament, January 2018 to May 2018.

Convergence is one of the key goals of the European Union and has taken centre stage in recent debates. Focusing on real, nominal and cyclical convergence, the paper presents important indicators and discusses their development across time and countries. Evidence suggests that income, employment and other key economic indicators have converged for some groups of member states before coming to a halt (or even diverging) with the onset of the global financial and euro area debt crises.

The paper subsequently discusses which types of convergence are of importance for the proper functioning of the EMU. For one, a successful design and transmission of monetary policy is greatly facilitated if members of a currency union are at similar stages of their business cycles. Likewise, a certain degree of nominal convergence is crucial for the proper functioning of a monetary union, but full convergence would not be economically justified. Real convergence as such is not required for a functioning monetary union, but constitutes an important objective of the EMU in itself and may foster cohesion and political acceptance of the EMU.

We argue that, in the existing institutional setup, economic convergence depends mostly on the policies of the member states. In this context, we assess the recently proposed reform delivery tool, which aims to incentivise governments to conduct growth-enhancing structural reforms by means of fiscal transfers. Acknowledging the importance of national

Impact of globalisation on income distribution

ownership, giving member states the opportunity to submit reform proposals, and requiring detailed implementation milestones all go in the right direction. However, the disbursement of funds should depend not only on the implementation of the agreed reforms, but also on achieving output convergence targets. Moreover, available resources should be used more effectively in promoting economic convergence. We subsequently present our proposal of “national convergence roadmaps” which serves as a blueprint for the reform delivery tool. Our proposal aims to strengthen the role of national responsibility for the convergence progress by giving member states the possibility to propose a convergence roadmap in the context of the European Semester, specifying structural reform plans and convergence targets. Convergence targets should be restricted to a small set of output convergence goals that allow for better policy targeting and give more emphasis to policy prioritisation. Financial support for structural reforms would depend on the potential for positive spillovers, continuous implementation of the reform package and achievement of the agreed convergence goals. Existing resources from the European Structural and Investment Funds should be used for this purpose. Restricting programme eligibility to member states with below-average per-capita GDP would ensure that resources are channelled towards those countries with the greatest need to catch up.

The German Property Tax: A Public Finance Analysis and Reform Options

C. Fuest, L. Immel, V. Meier, F. Neumeier for Haus & Grund Deutschland; ZIA Zentraler Immobilien Ausschuss e.V., July 2018 to August 2018, publication *ifo Schnelldienst* 71(22), 2018.

In April 2018, the German Federal Constitutional Court declared the current procedure of assessing property values to determine the tax base for the property tax as unconstitutional. The German legislature must revise the assessment procedure by December 2019, or else the property tax must no longer be collected. This study provides an evaluation of the property tax in general, as well as specific reform proposals that have been made up to date.

At first, a set of criteria for an economically sensible property tax is identified. This is followed by a comprehensive discussion of different reform proposals and an

economic assessment of these proposals based on the established criteria. Particular attention is paid to four different property tax concepts that differ with regard to the tax base: one based on market values of property, one based on construction costs, one based on land values and one based on the plot and floor space. The implications of the different models regarding the tax burden for property owners, as well as the municipalities’ tax revenues, are empirically analysed using an extensive dataset collected specifically for this purpose. Lastly, the study evaluates the consequences of a property tax reform for the German Länder fiscal equalisation scheme (*Länderfinanzausgleich*).

The study concludes that from a public finance perspective, the better arguments speak in favour of a property tax with a simple tax base. A property tax based on plot and floor space, for instance, would meet this criterion. In contrast, value-based procedures to determine the property tax would involve substantial problems. Assessing market values for property would involve significant assessment costs, which is hardly justifiable given that the revenues from the property tax are of only minor importance compared to the revenues collected from other taxes that involve lower assessment costs (i.e., property tax revenues amount to roughly 14 billion euros as of 2017). However, the application of standardised procedures to lower the assessment costs would again raise doubts about the constitutionality of the property tax. Moreover, the results of the empirical analyses indicate that value-based procedures to determine the property tax would lead to an unequal distribution of the tax burden. Property owners or tenants living in major cities would have to pay significantly more property taxes than they currently do. Finally, value-based procedures would imply that economically strong states like Baden-Württemberg or Bavaria would have to make larger contributions to the German fiscal equalisation scheme.

R&D Tax Credits and the German 3.5% Objective

C. Fuest, L. Immel, F. Neumeier, D. Stöhlker for the Vereinigung der Bayerischen Wirtschaft e.V. (vbw), June 2018 to July 2018.

The governing parties in Germany have stated the objective to raise total spending on research and development (R&D) to 3.5% of German gross domestic product

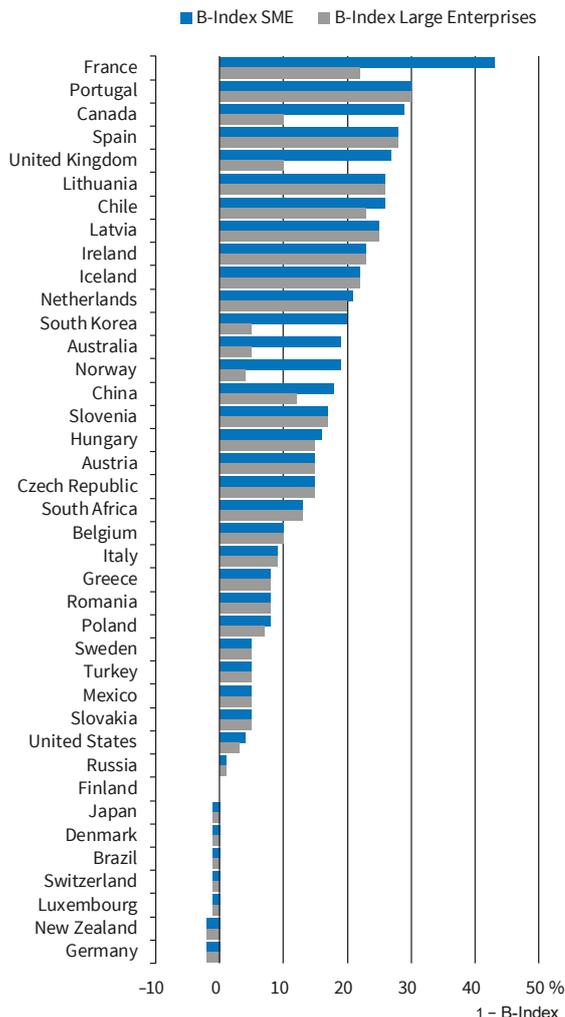
Value-based property taxes are problematic

Incentivising private R&D spending

(GDP) by 2025. However, in light of the absolute as well as the relative importance of private R&D spending, a significant increase in private R&D spending is required to reach this goal. This study analyses whether introducing tax credits to incentivise private R&D spending can help to achieve the government’s ambitious objective.

The study starts by summarising the economic arguments in favour of R&D tax credits, before taking stock of the most common international practices, as well as documenting the role played by tax credits around the globe. Next, it reviews the existing empirical evidence on the effectiveness of R&D tax credits and discusses whether tax credits are a suitable instrument to meet the German government’s objective.

R&D Subsidies in an International Comparison



Source: Calculations of the ifo Institute on OECD data (2017). © ifo Institute

There are important economic reasons for Germany to introduce tax incentives for R&D. On the one hand, the level of R&D spending is generally lower than the socially optimal level, due to the positive externalities of R&D as well as asymmetric information between R&D firms and external providers of capital. R&D tax incentives have the potential to rectify these problems. On the other hand, Germany is one of the few OECD and EU countries to rely only on direct R&D subsidies and forego promoting R&D via tax concessions. This represents a considerable disadvantage in international competition over taxes and business locations.

Moreover, the empirical evidence suggests that R&D tax incentives lead to a disproportionate rise in private R&D spending and are thus highly effective.

Consequently, from an economics perspective, the introduction of R&D tax credits in Germany seems advisable. All in all, the German government’s objective to increase R&D spending to 3.5% of GDP appears to be achievable only if R&D tax credits are adopted.

Taxing the Digital Economy – Impact of Tax Changes on Selected Locations (Upper Bavaria/ Bavaria and/or Germany)

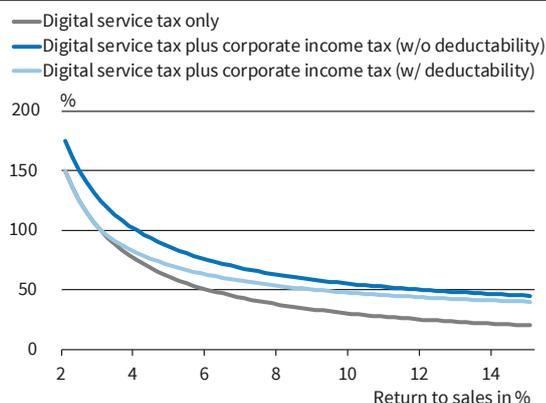
C. Fuest, V. Meier, F. Neumeier, D. Stöhlker for the Chamber of Commerce and Industry for Munich and Upper Bavaria, January 2018 to September 2018, publication in *Impulse für die Wirtschaftspolitik*, IHK für München und Oberbayern, Munich, 2018.

Firms in the digital tech sector are frequently accused of not paying enough in terms of taxes, e.g. by exploiting favourable tax conditions in tax havens. The European Commission (EC) estimates effective taxes to be no higher than 9.5% for firms in the digital sector as compared to 23% for firms outside the tech industries. Beyond this background, the EC has recently proposed introducing a tax on specific sales revenues of those firms. According to its proposal from March 2018, it plans to charge a tax rate of 3% on revenues from selling user data, placing online advertising and providing online marketplace infrastructure. Companies with total revenues smaller than 750 million euros worldwide and less than 50 Mio. euro in beforementioned digital sectors are exempted from the tax.

This study highlights some important economic drawbacks that the current proposal of a digital tax has. By

focusing on a firm's revenues instead of its profits the tax favours firms with relatively high profit margins – potentially those with higher market power and established business models – as compared to new market entrants such as start-up firms. Moreover, given that profit margins are smaller in times of crisis, the tax has a pronounced procyclical character with higher taxes relative to profits in downturns, thereby amplifying the effect of the recession for firms.

Effective Tax on Profits Following the Introduction of the Digital Service Tax for Different Returns to Sales



Source: Calculations of the ifo Institute.

© ifo Institute

The study also estimates the potential revenues from the introduction of the tax. Depending on whether digital revenue taxes can be deducted from usual corporate profit taxes or not, we estimate the revenues to be between three to four billion euro in total, which is equivalent to only 0.1% of total tax revenues in the EU. Importantly, given that the tax would hit mostly firms from the United States and therefore has the same effect as an import tariff on their services, the introduction of the tax could trigger potential retaliation measures, which could easily offset the minimal revenues from the tax.

Short-time Work Subsidies in a Matching Model

V. Meier, internal project, March 2017 to September 2018.

We analyse how changes in maximum eligibility period of short-time work subsidies affect wages and unemployment. Moreover, a rule of optimal eligibility for short-time work subsidies is derived.

Current Projects

Regional Inequality and Extremist Voting in Germany

F. Dorn, C. Fuest, L. Immel, F. Neumeier, internal project, since October 2016.

Over the past decades, many industrialised countries have experienced both an increase in economic inequality and an increase in the popularity of nationalist and leftist parties and movements. Many pundits posit that these two phenomena are in fact closely linked. The economic strains many groups in society experience are believed to have fuelled resentments against mainstream political parties and against the political order itself. While established parties are losing the trust of their voters, many extremist and populist movements on both sides of the political spectrum have gained popularity and support. According to the current narrative, the more unequally economic resources are distributed, the greater the appeal of extremist and populist views. The extant empirical evidence suggests that inequality and political polarisation are indeed correlated. Evidence on the causal relationship between inequality and polarization is scarce, though. The aim of this project is therefore to estimate the causal impact of economic inequality on political polarisation using IV estimation. To this end, we compute different inequality measures between and within counties using the German Microcensus and combine these with county-level election outcomes from federal and state elections.

Estimating the impact of economic inequality on political polarisation

Evaluation of Tax Concessions

C. Fuest, L. Immel, F. Neumeier in cooperation with the FiFo Cologne, the ZEW Mannheim and the Fraunhofer Institute for Applied Information Technology, Karlsruhe, for the German Federal Ministry of Finance, June 2017 to March 2019.

According to the guidelines for government subsidies (*erweiterte Subventionspolitische Leitlinien*) of the German federal government, all government grants need to be evaluated on a regular basis. This applies to direct subsidies as well as tax concessions. In 2007 and 2008, 20 of the most important tax concessions were evaluated. Now, the remaining 32 concessions currently effective are to be examined. The aim is to quantify and to evaluate those concessions with respect to several

factors including their effectiveness, efficiency, transparency and sustainability.

As part of the project, the Research Group evaluates three different tax allowances for capital gains resulting from the sale of a business and granted in the event that the business owner is at least 55 years old or unable to work at the time of the sale.

For these tax concessions, a final report is prepared. The report includes an outline of the legal basis, background information, quantitative analyses and evaluations with regard to transparency, suitability, and the effectiveness of the tax concession in questions as well as policy recommendations. In addition, a concise evaluation sheet (*Subventionskennblatt*), summarising the main results, is published for each of the three tax concessions. In order to ensure the consistency of the evaluation of all 32 tax concessions, a uniform evaluation scheme will be applied.

Tax Cuts Starve the Beast! Evidence from Germany

C. Fuest, F. Neumeier, D. Stöhlker, internal project, since October 2016.

In the context of this research project we evaluate how fiscal policy reacts to exogenous changes in the government's fiscal situation. Utilising panel data from the German states covering the period from 1992 to 2011, we assess to what extent exogenous changes in tax revenues affect total public revenues, aggregate public expenditure as well as specific subcategories of government spending in which the German states hold major competencies. Establishing a causal link between resources and spending turns out to be a challenging exercise due to reverse causality issues. In order to overcome this problem, we apply the narrative approach pioneered by Romer and Romer (2010) in order to construct a measure of exogenous tax shocks which eventually allows us to identify the causal effect of tax changes on fiscal policy. Our findings indicate that tax changes trigger expenditure adjustments into the same direction after two to three years, specifically with respect to spending on government administration and health expenditures. The panel dataset that we construct together with the exogenous tax shock series allows us to test several other hypotheses in the empirical public economics literature such as the so-called "war of attrition". It is usually argued in these

types of models that coalition governments have an incentive to delay the stabilisation and adjustment process in response to fiscal shocks because each member of the coalition seeks to transfer onto the others the political costs of the adjustment. Despite leaving the economy in an unstable and fiscally unsustainable mode after the negative revenue shock, both parties will not give in until the first player, i.e. the "loser" of the game, accepts to bear a disproportionately large share of the fiscal burden. Our results do not provide empirical support for the phenomenon. The adjustment process among coalition governments is neither initiated later nor smaller in size as compared to non-coalition governments.

Political Economy of Redistribution between Traditional and Modern Families

V. Meier in cooperation with M. Rablen, University of Sheffield, internal project, April 2018 to March 2019.

We consider an environment in which families may either be "traditional" single-earner or "modern" double-earner households and voters determine subsidies paid to each group. Voters take both redistributive as well as efficiency aspects into account. We discuss how the size of these subsidies is determined and how it varies over the course of development when the share of modern households is growing.

Changes in tax cause spending to move in the same direction

Library

The library of the ifo Institute is primarily a service provider for ifo and CESifo, visiting researchers and students of the Munich universities. With more than 139,500 bibliographical units, some 320 periodicals and 30 statistical reports, the ifo library is one of the largest libraries for economics in southern Germany.

The Institute's electronic catalogue uses various descriptors, PTS country codes, and abstracts, as well as the classification system of the *Journal of Economic Literature* (JEL).

Thanks to its literature and database research, along with its procurement of data and information on selected economic and economic-political areas, the library fulfils an important service function.

The ifo Institute's library is a member of the library association of the northern German Länder, GBV. This allows users to access ifo's library via the internet and marked an important step in the harmonisation of the Ifo holdings with those of other large libraries in economics. The ifo online public access catalogue (OPAC) is a component of the ifo website (under Publication Series/Database Search).

The library of the ifo Institute cooperates closely with the German National Library of Economics (ZBW) in Kiel and Hamburg.

Harmonising
economics libraries

Press, Publications, Conferences

Communicating research to various stakeholders

The ifo Institute forms a bridge between academic research and politics. The applied, scientific economic research carried out by the ifo Institute aims to intensively contribute to policy advice and the economic policy debate, as well as to provide services to researchers and the general public. Successfully transferring information to the public realm is the key task of the Press, Publications, Conferences department. It prepares and conveys the results of ifo's research to its target audience of political and business decision-makers, public administrators, members of the academic community and the media. Providing schools and the general public with economic information is another area of growing importance. The department also offers services for ifo's Executive Board and its research departments, as well as supporting them in their publications, organising major events and by taking responsibility for the public image of the ifo Institute. This particularly includes the layout of ifo's print and online media, as well as the design and editorial maintenance of its website. In addition, the department is responsible for the numerous video projects and the social media activities of the entire CESifo Group. In January 2019 the department was renamed "Communications" and Dr. Cornelia Geißler was entrusted with its management. In the newly created position, she will contribute to the further development of the "ifo" brand with a holistic communications concept.

DEVELOPMENT, IMPLANTATION AND PROFESSIONALISATION OF KNOWLEDGE TRANSFER CONCEPTS

The three-year project "Development, Implementation and Professionalisation of Knowledge Transfer Concepts", funded by the German Federal Ministry of Education and Research and supervised by ifo's Executive Board and Press, Publications, and Conferences department, was completed in May 2018. The project's aim was to develop a usage concept geared towards the future needs of the ifo Institute that could at the same time serve as a model for other economic research institutes. The project aligned the ifo Institute's diverse transfer activities with the information needs of the target groups and, at the same time, integrated them into an institutionalised strategy. This increased the efficiency of the current ifo knowledge transfer system and unleashed new potential for knowledge transfer.

In 2018, the project focused on establishing (internal) transfer processes, evaluating the needs of different

social groups (especially teachers), and further developing transfer offers.

To assess the need for economic information at schools in greater depth, the ifo Institute and MedienLB conducted a random survey of media centers in Germany in 2017. The evaluation of the survey results was completed in 2018. The survey questionnaire was developed by the ifo Institute. The nationwide survey of managers and media consultants in 65 media centers was performed by MedienLB. This survey has resulted in a series of new titles for multimedia offerings to which ifo will contribute its expertise.

The ifo Classroom has been published regularly every two months as an online newsletter since July 2017. It features both opinion articles by ifo experts and research contributions on a specific topic, and supplements them with data and editable graphics. As a special service, teachers have a protected area on the ifo website at their disposal where they can access all newsletter content and where existing data offerings are regularly updated.

The ifo Institute endeavours to invest in teacher training. To this end, the *ifo Praxistage* training series for modern economics education was launched 2017 and continued in 2018. It is recognised as an official further training course by the Akademie für Lehrerfortbildung und Personalführung in Dillingen (ALP) and is aimed at teachers from Bavaria who teach economics at general and vocational schools. In 2019, the Centre for Economic Education in Siegen (ZöBiS) will provide additional support for the didactic implementation of the training, which is conducted in cooperation with the Wirtschaftsphilologenverband Bayern (wpv).

Strategy for effective knowledge transfer



"ifo Praxistage"

Since 2018 there has been a cooperation agreement with the ALP to regulate both the provision of ifo experts for the continuing education programme in Dillingen and the organisation and implementation of a joint continuing education programme. The ifo Institute will provide experts, while ALP will organise the premises and the organisation. The event will also be offered annually in the future for use in the grammar school economics seminar or in the seminar subject at vocational schools.

Another knowledge transfer tool that was developed as part of the project and targets pupils themselves is ifo's participation in the YES! Young Economic Summit. Starting with the school year 2018/19, the ifo Institute in cooperation with KU Eichstätt-Ingolstadt will participate in YES! This national student competition on economic policy issues is a joint project by the ZBW – Leibniz Information Centre for Economics and the Joachim Herz Foundation under the patronage of the German Federal Ministry of Economics and Energy. YES! now has a number of cooperation partners from the Leibniz Association.

To make these transfer tools known to its teacher target group, the ifo Institute was represented with a stand at the 39th Business Philology Conference in Passau. Direct exchanges with over 200 teachers present significantly raised the Institute's visibility as a provider of curriculum-accompanying material.

Project funding by the German Federal Ministry for Education and Research ended on 31 May 2018. Beyond the project period, some of the newly developed transfer instruments were further optimised and stabilised:

Cooperation: Although the ifo Institute is excellently positioned, it is essential for efficient knowledge transfer to enter into cooperation. Three examples illustrate this necessity: 1) The learning of special methodological know-how (e.g. design thinking) supports the ability to identify and consider user needs during the transfer; 2) Study design is of enormous importance if a comprehensive insight into usage and needs is to be gained; and 3) The visibility of the instruments heavily influences their success. Partners from practice or from the target groups help to develop newly developed transfer tools and, above all, to raise their profile.

Transfer management: In addition to the cooperation partners, appointing a knowledge transfer officer was

crucial to the success of the project. The transfer of research results is a complex process that can be successful only if competencies from very different areas are brought together in a well-coordinated manner. This role was so demanding that the knowledge transfer officer reported directly to ifo's Executive Board.

Knowledge transfer culture: It has been shown that, to establish a knowledge transfer culture, it is necessary to make employees aware that the transfer of research results is not only in ifo's best interest, but also in their own and, as a result, forms an integral part of the Institute's tasks. Concrete measures, like transfer controlling and the introduction of a transfer cost unit in cost and performance accounting, ensure that transfer and exploitation are anchored in the everyday work of ifo researchers and bring transparency to the work that is invested in knowledge transfer tasks.

PRESS RELATIONS

The task of the press office is to present the Institute's research results to the media and the general public in an understandable, non-technical form. Over 200 press releases in 2018 offered information on research results, current survey results, economic policy statements, new publications and events. As an intermediary between journalists and the ifo Institute, the press office coordinates press interviews with Institute staff, organises press conferences and answers queries. It also provides the general public with relevant information and material.

Its continuous and active PR work is one of the reasons why the ifo Institute has a very high media profile. In 2018 the ifo Institute improved upon its leading position as Germany's most frequently cited economic research. This is partly due to the monthly publication of the ifo Business Climate Index, the ifo Export Expectations, the ifo Employment Barometer and other ifo survey results. ifo's forecasts of the economic outlook, and above all ifo's economic policy statements, also attract a great deal of media attention.

In the reporting year Hans-Werner Sinn, ifo's former president, and Clemens Fuest, ifo's current president, contributed to the very high media presence of the ifo Institute. With numerous interviews and op-eds in national print media, on television and on the radio, both presidents repeatedly generated fresh momentum for the economic policy debate. As regular columnists for

Research results in a non-technical form

Very high media profile

Radio, TV and newspaper interviews

the German economics magazine *WirtschaftsWoche*, both Hans-Werner Sinn and Clemens Fuest have contributed regularly to current economic policy topics. Their contributions to Project Syndicate are placed in important national daily newspapers across the world. As interview partners in the radio, television and daily newspapers Hans-Werner Sinn and Clemens Fuest are in high demand across Europe.

Clemens Fuest's statements on the Franco-German reform concept for European Monetary Union, on the Brexit negotiations, on Germany's new property tax, and on income inequality attracted a great deal of interest. Also of great interest in 2018 were the statements by Gabriel Felbermayr, Director of the ifo Center for International Economics, on the trade war between the US and China and on the transatlantic customs dispute. Other ifo researchers, and especially the heads of ifo's research departments, were also actively involved in the ifo Institute's media work in 2018 via interviews and press articles.

To support the media in reporting on the ifo Institute's results, ifo's press releases were more strongly oriented towards journalists' information needs, and an additional service for the media offering regular notice of forthcoming regular press releases was launched. In addition, a television studio has been set up in the ifo Institute, which is connected live to the television channels via Skype.

Press releases have also been sent out in French since the fourth quarter of 2017 in order to raise ifo's media profile in the French-speaking world. The releases are sent to a mailing list of around 600 Francophone journalists.

The "ifo Practical Experience Days for High-Quality Journalism", moderated by Jürgen Seitz, editor of Bayerischer Rundfunk, and ifo press officer Harald Schultz, had to be postponed from November 2018 to January 2019 for scheduling reasons. 15 young journalists from the German School of Journalism and six editors from Bayerischer Rundfunk attended the event, which aimed to deepen participants' understanding of economic relations through the practice-oriented communication of economic and journalistic knowledge. Leading researchers from all ifo research departments presented their work and research results. This highlighted typical mistakes made in reporting on

economics via practical examples. In addition to Klaus Wohlrabe's explanation of ifo's business surveys, Marcel Thum's presentation of his study on bitcoin was given a very positive reception. Another highlight was Clemens Fuest's explanation of Brexit and the reform of the euro zone.

PUBLICATIONS

Another of the department's responsibilities is the conception, production and distribution of ifo's print and digital publications. This includes developing topics of general current interest, editing and translating (German/English or English/German). The pre-printing work is also done in the department, including the preparation of graphs and tables, as well as type-setting and layout, interfacing with the printers and address management. The Press, Publications and Conferences team assists other departments in the professional presentation of their publications and lectures.

The ifo Institute publishes the following series of publications:

- *ifo Schnelldienst*: a bi-monthly journal containing discussions of current policy issues and ifo research findings
- *ifo Konjunkturperspektiven*: a monthly journal presenting the current results of the ifo Business Survey in graphs, tables and descriptive analyses with a focus on a selection of sectors every month that recurs on a regular basis
- *ifo Dresden berichtet*: a journal of the ifo Dresden Branch on economic policy and structural change in eastern Germany that appears six times a year
- *ifo World Economic Survey*: a quarterly publication in English containing the results of an ifo expert poll on the world economy in graphs and tables with a detailed analysis
- *CESifo Forum*: a quarterly English-language journal published by CESifo GmbH focusing on current economic topics of worldwide interest with contributions by internationally renowned authors
- *ifo DICE Report*: a quarterly English-language journal with articles on institutional regulations and economic policy measures using a country-comparative approach

Helping journalists communicate economics

- *CESifo Economic Studies*: a quarterly, refereed academic journal in English. Articles present the results of economic research and address policy-relevant issues. *CESifo Economic Studies* is published by Oxford University Press. Its managing editor is Panu Poutvaara, who has been director of ifo's Center for International Institutions Comparisons and Migration Research since 2010
- *ifo Beiträge zur Wirtschaftsforschung*: a book series in which important research projects of the ifo Institute are published

Since 2014 selected journals have also been available in EPUB format.

The ifo Institute also publishes the results of expert reports that do not appear in book form in the *ifo Forschungsberichte* and research conducted by the ifo Dresden Branch in *ifo Dresden Studien*, which deals primarily with topics affecting the new German federal states and their eastern neighbours.

The *ifo Newsletter*, a free electronic information service, is distributed at the end of each month by email. It reports, in German, on the latest research findings, key publications, selected events, personnel particulars, important dates and a range of other news from the ifo Institute. The **ifo Dresden Newsletter** is a service offered by the Dresden Branch of the ifo Institute that regularly reports on the latest publications and events organised by the branch. In addition, the publication of new issues of *CESifo Forum*, *ifo DICE Report* and *ifo World Economic Survey* is accompanied by a summary of contents and download options.

Some ifo publications are distributed by international, online service providers. A complete overview of the publications and ordering information is available at <http://www.cesifo-group.de/publications>.

SOCIAL MEDIA ACTIVITIES

The ifo Institute is active in selected social media channels. On Twitter, the CESifo Group informs about news on the website in German (@ifo_Institut) and English (@CESifoGroup). ifo President Clemens Fuest, Center Directors Andreas Peichl and Gabriel Felbermayr and retired ifo President Hans-Werner Sinn also have Twitter accounts through which they refer to current research of their own or important external research

results or policy recommendations and enter into a direct exchange with other Twitter users. The ifo Center for Educational Economics has its own Twitter accounts (@ifo_Bildung or @ifo_education), since the target group of people interested in educational economics can be served according to their needs. The users of the website can keep up to date with the latest news from the ifo Institute and the CESifo Group via the RSS feeds of the CESifo Group. Job advertisements of the ifo Institute are published via Xing and LinkedIn. Selected photos and images are available on Flickr and YouTube for easy access.

CONFERENCES

The Press, Publications, Conferences department is responsible for organisation and holding of the ifo Institute's major conferences, presenting the Institute at external conventions and conferences like, for instance, the Annual General Meeting of the Verein für Socialpolitik (Association for Social Politics), and for taking care of groups of visitors to the Institute. Key events in 2018 were symposia on tax and financial policy and European unemployment insurance, the ifo Annual Meeting and the Munich Economic Summit. Public events are mostly livestreamed on the internet to make them accessible to members of the public who are unable to attend in person.

For several years now, the ifo Institute and its President have maintained an intensive and direct exchange with members of the German Bundestag. In 2018, two "**Parliamentary Breakfasts**" took place at the Bavarian Representation in Berlin, to which members of selected committees were invited. In March and October, Clemens Fuest discussed the need for economic, financial and European policy action and the current challenges with parliamentarians.

On 6 March 2018, the Bayerischer Handwerkstag and the ifo Institute held a symposium in Munich entitled "**Sparkling Revenues, Major Challenges – Expectations of a Sustainable Fiscal and Financial Policy**". In his introductory words, Franz Xaver Peteranderl, President of the Bayerischer Handwerkstag, pointed out that tax policy has a considerable influence on competition and influences both investment decisions and competition between different forms of enterprise. In general, it is necessary to put the complex tax system to the test. ifo President Clemens Fuest critically discussed the tax policy plans of the Grand Coalition in his lecture. He concen-

Online and social media presence

Direct exchange with politicians

Tax reform in Germany is essential

trated his remarks on the need for reform in the areas of income taxation, corporate taxation and wealth-related taxes. In the area of income taxation, politicians should use tax relief leeway to reduce the middle-class belly in the income tax tariff. In the area of corporate taxation, measures are necessary to improve Germany's position in international tax competition. With regard to property-related taxes, there is a need for reform of real estate taxes, real estate transfer taxes, and inheritance tax. Franz Josef Pschierer, State Secretary at the Bavarian State Ministry of Economic Affairs and Media, Energy and Technology, underlined that the German economy is currently developing extremely positively. Nevertheless, Germany must act to safeguard its competitiveness. International tax competition had been fuelled, and the coalition agreement lacked a commitment to courageous tax relief. Deborah Schanz, head of the Institute for Business Taxation at the Ludwig Maximilian University in Munich, expressed doubts as to whether the German federal government could stay in the black, as the coalition agreement was peppered with tax gifts and massive investment promises at various points. She also said that an urgently needed reform of trade tax was not being discussed and that international tax competition was being virtually ignored. In the subsequent panel discussion, moderated by Steffen Range, editor-in-chief of the *Deutsche Handwerks-Zeitung*, the speakers once again explained their assessments of the Grand Coalition's tax policy plans. Overall, the tax policy plans were disappointing. They are rather a patchwork rug, there is no underlying vision. The conclusion: the German tax system is too complicated, the bureaucracy too large and the tax administration too backward. The contributions presented at the symposium were published in *ifo Schnelldienst* 71(6), 2018.

International tax competition is being ignored



Panel discussion: Franz Josef Pschierer, Clemens Fuest, Franz Xaver Peteranderl, Steffen Range, Deborah Schanz

On 12 June 2018, the ifo Institute, together with SPD MEP Jakob von Weizsäcker, organised the discussion round “**Self-insurance and Reinsurance against Labour Market Shocks: A New Proposal for the Euro Zone**” in Berlin. Sebastian Dullien, Professor at the Hochschule für Technik und Wirtschaft in Berlin, presented the concept of a European unemployment insurance developed jointly with Weizsäcker et al. With this, a significantly better cushioning of economic shocks in the Eurozone could be achieved and, due to the high share of national self-insurance, practically without incentive effects or even permanent transfers. ifo President Clemens Fuest and Jakob von Weizsäcker discussed this concept, alternatives and political implementation under the chairmanship of Cerstin Gamelin, *Süddeutsche Zeitung*, together with CDU Member of Parliament Ralph Brinkhaus and Sebastian Dullien.

On 28 June 2018, the 69th **Annual Meeting** of the ifo Institute took place in the Great Hall of the Ludwig Maximilian University in Munich. Clemens Fuest, President of the ifo Institute, reported on the Institute's activities in 2017 at the morning general meeting. The annual financial statements presented by ifo Executive Board member Dr. Stephanie Dittmer for the year ended 31 December 2017 were unanimously adopted and the actions of the Executive Board unanimously approved.

At the end of the general meeting – after the election of the members of the Board of Trustees – the prize of the Gesellschaft zur Förderung der wirtschaftswissenschaftlichen Forschung (Friends of the ifo Institute) e.V. was awarded. Detailed information on the award can be found in the chapter Personnel Development and in *ifo Schnelldienst* 71(13), 2018.

The public part of the 2018 ifo Annual Meeting was devoted to “Digitalisation and Innovation and their Significance for Growth and Competitiveness”. The keynote speaker Gisbert Rühl, Chairman of the Management Board of Klöckner & Co SE, opened his speech with an address on the topic of “Platform”. From his point of view, the establishment and operation of consumer-related internet-based platforms is competitive to the detriment of Germany and Europe – just think of Google, Facebook or Netflix – but in the area of industry 4.0, there is certainly the possibility that Germany will take the lead. With its medium-sized industrial structure, but also its innovative large corporations, it offers

good conditions for this. In the further course of his lecture, Gisbert Rühl described how Klöckner was pushing ahead with digitalisation.



Clemens Fuest

ifo President Clemens Fuest dealt in his keynote speech with a partial aspect of the economic changes brought about by digitalisation, tax policy. In his view, tax policy is heading in the wrong direction. There is no doubt that the economic changes brought about by digitalisation are of undisputed importance, e.g. the growing importance of data for value creation and the growing importance of intangible assets with a high degree of mobility. Moreover, digital business models often do not require a physical presence in sales markets. There was also concern about the growing market power of digital companies, i.e. a shift away from consumers towards companies. The European Commission is now pushing ahead with a project: the Digital Service Tax as a compensatory tax. The Commission assumes that there is a dramatic tax differential between the traditional and the digital economy, since, for example, the depreciation rules for digital and non-digital capital goods are different. However, this thesis is “cautiously expressed, poorly documented” and does not offer any argument for the introduction of a new equalisation tax.

The subsequent panel of experts, which included Clemens Fuest and Gisbert Rühl as well as Irene Bertschek, ZEW, Mannheim, Rupert Lehner, Bitkom, and Friedrich W. Hesse, Leibniz Institute for Knowledge Media and Vice President of the Leibniz Association, deepened the discussion on the challenges posed by and the effects of digitalisation. As a conclusion of the discussion, the speakers stated that digitalisation is an enormous challenge – especially for a country like Germany with an ageing society –

but it offers more advantages than disadvantages. To identify these advantages in concrete terms would help people to overcome their fears of digitalisation and adapt to the changes. The ability to do so is certainly there. We should start to work and experiment with the new instruments. A detailed report of the ifo Annual Meeting with speeches by the speakers is published in *ifo Schnelldienst* 71(13), 2018.



Panel discussion: Clemens Fuest, Gisbert Rühl, Friedrich W. Hesse, Rupert Lehner, Irene Bertschek, Marc Beise

On 4 and 5 July 2018, after a two-year break, the **Munich Economic Summit** took place under the patronage of Bavarian Prime Minister Markus Söder. The aim of the conference is to bring together high-ranking government representatives, outstanding international scientists and decision-makers from business, the media and society to discuss important European policy issues personally and with a high degree of international visibility. In order to give young scientists access to these networks and the exchange associated with them, ifo doctoral candidates were specifically invited to the event.

The topics of the current summit were manifold: Europe's role and competitiveness in a new world order, the impact of the Brexit crisis, migration and digitalisation, stability of the financial sector, populist and authoritarian tendencies, European Economic and Monetary Union. 25 speakers exchanged views amongst themselves and with the public in five keynote speeches and four panel discussions.

Keynote speakers on the first day were EU Budget Commissioner Günther Oettinger, Sigmar Gabriel, Member of the Bundestag and former Vice-Chancellor, and Pier

European competitiveness in a new world order

Europe, and Germany,
must become more
assertive

Carlo Padoan, Member of the Italian Parliament and former Economics and Finance Minister. In their speeches, they addressed the various aspects of a possible reorganisation of Europe. Günther Oettinger stressed that the four European freedoms – free movement of capital, people, goods and services – represent significant added value for the EU in global competition. In Sigmar Gabriel's view, the current global situation requires Europe to assert itself and develop a major strategy – Germany must become more assertive here. Pier Carlo Padoan sees great progress in risk reduction, but much less in risk sharing. Multi-stage, non-national solutions are necessary, and these require trust. Unfortunately, this is low in the EU. Compliance with and implementation of jointly agreed rules is an essential element in building trust.

Protectionism, the threat of a trade war between Europe and the US, multilateral trade agreements and the rise of their bilateral counterparts, the importance of the World Trade Organization and the need for its reorganisation were the central topics of the first panel discussion chaired by Katinka Barysch, Head of Political Relations, Allianz SE, Munich. Participants included Richard Baldwin, Professor for International Economics, Graduate Institute of International and Development Studies, Geneva, Anthony L. Gardner, former US Ambassador to the EU, Arancha González, Executive Director of the International Trade Centre, and Karl Haeusgen, Vice President of the German Engineering Federation (VDMA).

In Panel 2, John Peet, *The Economist*, discussed the current state and future direction of the EU with Giuseppe Bertola, Professor for Economics at the University of Turin, Jerzy Kwiecinski, Polish Minister for Investment and Economic Development, Liliana Pavlova, Bulgarian Minister for Regional Development, and Sir Ivan Rogers, former British representative to the EU.

The second day began with a keynote speech by Timotheus Höttges, CEO of Deutsche Telekom, on "Europe's role and competitiveness in a digital world". He stressed that the European business model offers every opportunity for future success and that its values guarantee "peace and individual freedom". However, the conditions in a digital economy are no longer the same and require new impetus from European businesses. Improving Europe's digital competitiveness would require better governance, the best broadband infrastructure and the courage to invest in strategic industries.

Improving
Europe's digital
competitiveness

Richard Gutjahr, journalist, then discussed the competitiveness of the European economy in a digital world with Michael Böhmer, Economic Advisory Partner for EY in Germany, Switzerland and Austria, Viktor Mayer-Schönberger, Professor at Oxford University, Marie-Elisabeth Rusling, CEO and Member of the Board of Business Angels Europe, and Tommaso Valletti, Chief Economist of the EU Commission.

In his keynote speech "The reform of the euro zone: what's missing", ifo President Clemens Fuest pointed out the Eurozone's vulnerability to the next downturn. The necessary reforms must be a balance of more market discipline and more risk sharing. One of the main obstacles to reform is a lack of confidence in the reliability of European rules and agreements. This confidence can be built through successful cooperation in other areas such as defence, border management and European infrastructure projects. The speech was directly followed by the EconPol Europe panel on the future of the euro. Clemens Fuest discussed this with Anne-Laure Delatte, Deputy Director of CEPii, Marek Mora, Member of the Board of the Czech National Bank, and Markus K. Brunnermeier, Professor of Economics at Princeton University. A video documentation of the event can be found at www.munich-economic-summit.org.

On 7 November 2018, the ifo Institute hosted the 18th **ifo Industry Colloquium** (ifo Branchen-Dialog) in cooperation with the Chamber of Industry and Commerce for Munich and Upper Bavaria and sponsored by the Bavarian State Ministry of Economic Affairs, Energy and Technology. This is a platform for discussing current developments from a sector-specific perspective. In the four industry forums of Industry, Trade, Construction and Services, experts from companies, associations, politics and research discuss current industry developments, trends and challenges. In the *ifo Schnelldienst* 72(1), 2019, detailed information on the conference will be provided in the Industrial Economics and New Technologies section.

INTERNET

The ifo Institute has digitalised most of its activities in research, policy advice and service and made this information available online. This applies not only to internal and external communication, to searches and to knowledge management, but also to business surveys, research projects and data provision to users worldwide. The ifo Institute's activities are linked with

those of its other partners in the CESifo Group. For this reason, the CESifo Group has a joint internet portal (www.cesifo-group.de) that combines the information offered by the ifo Institute, CESifo GmbH and the Center for Economic Studies (CES).



CESifo Group Website: <http://www.cesifo-group.de>

The internet portal aims to provide the public with comprehensive information from the working areas of the CESifo Group and to improve the general level of knowledge in economics. It also has the goal of quality assurance, by enabling complete transparency regarding the resources and output of the members of the CESifo Group, so that a control function can be exerted by its users.

On the internet portal of the CESifo Group, the ifo Institute presents timely information on the Institute, its services, its research topics, its economic policy advice based on this research, and its future plans. This also includes comprehensive information on the theoretical and policy-oriented output of ifo's research centers and its staff, as well as the media resonance of this output.

On the start page information from the Institute is prepared editorially in the form of ifo News and is complemented by images. In addition to topical press releases, these news pieces feature other research results, events, personnel changes, references to TV appearances and much more. This gives rise to a flow of news that can be directed by the Institute in a targeted

manner. Every news item is also published on Twitter, creating a direct connection with the ifo Institute's social media activities.

Targeted news flows

The range of services for the transfer of knowledge is being continuously expanded. In internet databases, publications can be easily searched and ordered and some can be retrieved in full-text form. Several ifo journals have also been offered as downloads in the EPUB format as of 2014, which is particularly suitable for viewing on mobile devices like tablets and e-readers. The library of the ifo Institute also makes its electronic catalogue available to external users. The DICE database (Database for Institutional Comparisons in Europe) offers information in a systematic and comparable form on institutional regulations, especially within the European Union. The ifo Business Surveys of the ifo Institute are carried out via an internet platform.

Numerous lectures given by guest researchers at the Center for Economic Studies (CES), as well as selected lectures at ifo events, are made available in a video format to an international audience in the CESifo Group's media library. CESifo GmbH and CES provide a wide range of information on their work in the joint internet portal, especially with regard to the CESifo Research Network and the scientific conferences organised by CESifo.

Preparations for a complete relaunch of the CESifo Group website continued in 2018. In the course of these preparations, the entire technical foundation of the internet portal, including the software used, will be changed and updated. Several content management systems were evaluated in terms of their suitability for meeting the specific needs of the ifo Institute and new approaches to optimising the content and structure of the website were developed. This work will continue in 2019 with external support.

Website relaunch ongoing

VIDEOS

Video contributions are becoming an increasingly important instrument for conveying information. Recordings of speeches, lectures, panel discussions and other events document the CESifo Group's work. CES and ifo began recording events and producing video films back in the 1990s, meaning that the CESifo Group now has a vast pool of video recordings. One well-established focus of ifo's use of video is livestreaming, or live broad-casts of events via the internet, which are

subsequently made available in its media library. This technology has significantly raised the public profile of CESifo events.

Virtual auditorium CESifo's Media Library also serves as a virtual auditorium: lectures and presentations are often viewed in their entirety. The CESifo Lectures, which can be accessed via the CESifo website, are recordings of lectures given by international academics at CES and ifo. In 2018 the collection of online lectures was expanded to include the Munich Lectures in Economics by Torsten Persson on "Institutions and Culture". Recordings of events were also made available on the video platform YouTube.

ifo Dresden

ifo Dresden Branch

The Dresden Branch, established by the ifo Institute in 1993, conducts empirical economic research that focuses on the special conditions in the new Länder, especially in the Free State of Saxony. ifo Dresden prepares economic analyses that deal with economic developments in eastern Germany and the Free State of Saxony. It also offers policy advice and information to the public. The branch receives financial support from the Free State of Saxony and draws on the experience of the ifo Institute, its parent institute in Munich.

The Dresden Branch currently specialises in the following **research areas**:

- business cycle activity and economic growth in Saxony and the new Länder
- human capital, structural change and the position of Saxony and the new Länder in locational competition
- labour market and social policy in Saxony and the new Länder
- integration of Saxony and the other New Länder into the international division of labour (especially with Central and Eastern Europe)
- public finance and support of economic development in Saxony and the new Länder.

More generally, ifo Dresden also conducts research into the implications of demographic change for economic development. The shrinking and ageing of the population will have a significant impact on nearly all fields of social and economic development, and thereby poses new economic policy challenges.

In addition to economic research, ifo Dresden offers **extensive services**. Economic policy oriented analyses are published in the journal *ifo Dresden berichtet* and in the book series *ifo Dresden Studien*. ifo Dresden provides information and advice on current economic policy issues to policymakers and the business community. It also organises workshops and conferences.

The journal *ifo Dresden berichtet* has been published every two months since 1994. In this journal, ifo Dresden researchers and external authors publish their current research findings on the economic situation in the new Länder for a wider public in politics, business and academia. The results of more comprehensive research projects are published in the series *ifo Dresden Studien*.

In 2018 three issues were published: No. 80 “Kosten kommunaler Leistungserstellung unter dem Einfluss von demografischem Wandel und Urbanisierung”, No. 81 “Personalbedarfe im öffentlichen Dienst des Freistaates Sachsens bis 2030 und Konkurrenzsituation zur Privatwirtschaft” and No. 82 “Strategien für die bestmögliche Ausstattung mit und Nutzung von Fördermitteln nach 2020”.

To mark the 25th anniversary of ifo Dresden, a scientific conference entitled: “Disparitäten: Herausforderungen für die Wirtschafts- und Sozialpolitik” took place in Dresden on 19 September 2018. Almost 30 years after reunification, eastern and western Germany still differ along various dimensions including economic power, wages and the property of private households. Disparities are not limited to the new and old Länder. There are also regional differences between north and south, as well as between rural and urban areas.

Prof. Marcel Thum, Executive Director of ifo Dresden, opened the conference by recalling the founding of the Dresden Branch in 1993. In a welcome address, Dr. Matthias Haß, Minister of Finances in the Free State of Saxony, emphasised the importance of ifo Dresden’s policy advisory work for politics. Over 100 participants discussed social disparities with Prof. Hans Vorländer, Technical University of Dresden, Prof. Andreas Wage-ner, Leibniz University of Hannover, Dr. Judith Niehues, Institute of the German Economy, Cologne, Prof. Bernhard Müller, Leibniz Institute of Ecological and Regional Development, Dresden, and Prof. Clemens Fuest, President of the ifo Institute.

Conferences and workshops regularly take place at the premises of ifo Dresden. The workshops held in 2018 included the 12th ifo Dresden Workshop “Macroeconomics and Business Cycle Research” (26–27 January 2018), the 8th ifo Dresden Workshop on “Labour Economics and Social Policy” in cooperation with TU Dresden (22–23 March 2018), the 8th ifo Dresden Workshop on “Regional Economics and Structural Change” also co-organised with TU Braunschweig (20–21 September 2018) and the 12th ifo Dresden Workshop on “Political Economy” (30 November–1 December 2018) together with CESifo, TU Dresden and TU Braunschweig.

In the series *Dresdner Vorträge zur Wirtschaftspolitik*, prominent economists present their latest research findings in economics and finance. In 2018, three lec-

Disparities not just
between eastern and
western Germany

tures were held in this series. Prof. Tobias Just, head of the “Immobilienwirtschaft” department at the IREBS International Real Estate Business School, University of Regensburg, and Director of the IREBS Immobilienakademie, Dr. Johannes Beermann, board member of the Deutsche Bundesbank, and Prof. Lutz Bellmann, Professor of labour economics at the University of Erlangen-Nuremberg and head of the “Betriebe und Beschäftigung” research unit at the Institute for Employment Research (IAB), discussed their views on current policy issues with audience participants from academia, policy-making and public administration.

Under the management of Marcel Thum and Joachim Ragnitz, 13 economists currently perform in research at the Branch, of which seven are doctoral candidates. The team is completed by two non-scientific staff members and a number of student research assistants. ifo Dresden Branch closely cooperates with the Technical University (TU) of Dresden and the Statistical Office of the Free State of Saxony. Cooperation agreements specifically cover the visiting fellowships of researchers, joint activities and presentations. In addition, the ifo Dresden Branch extends project-related work experience to interested students of economics.

BUSINESS CYCLE AND GROWTH IN SAXONY AND THE NEW LÄNDER

One of ifo Dresden’s core research areas is monitoring and forecasting the business cycle in Saxony and Germany’s other new federal states. For this purpose, the Branch carries out monthly evaluations of the ifo Business Climate Index, as well as semi-annual business cycle forecasts for the Free State of Saxony and eastern Germany as a whole. Additionally, the Branch conducts research at the intersection of business cycles and growth policy.

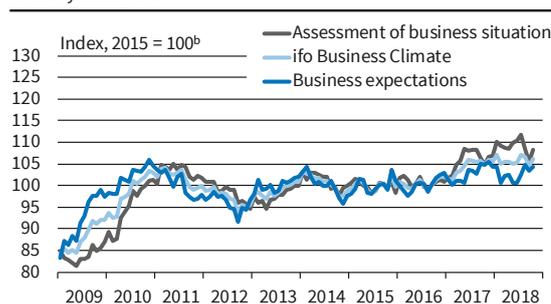
In 2018, ifo Dresden undertook the study “Berechnung und Fortschreibung der Produktivitäts- und Innovationslücken der deutschen Bundesländer” (Calculation and Projection of the Productivity and Innovation Gaps of the German Federal States) on behalf of the Bertelsmann foundation (jointly with the Munich-based ifo Center for Macroeconomics and Surveys).

Furthermore, the Dresden Branch produces the quarterly business cycle report for the federal state of Saxony-Anhalt on behalf of the Ministry of Economy, Sci-

ence and Digitalisation of Saxony-Anhalt. The reports are published on ifo’s homepage. The project will be concluded with the final report for the year 2018.

Besides these third-party funded projects, ifo Dresden also creates the monthly, regionalised evaluation of the ifo Business Climate Survey for eastern Germany and the Free State of Saxony. Its results are published as a press release and appear as a regular contribution to the magazines “Wirtschaft+Markt” and “Wirtschaft in Sachsen-Das Entscheidermagazin der sächsischen Zeitung” addressing a broad audience of media, business leaders and politicians.

ifo Business Climate Eastern Germany
Industry and Trade^a



^a Manufacturing, construction, wholesaling and retailing.
^b Seasonally adjusted.

Source: ifo Business Survey, October 2018.

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In addition to its monthly business cycle surveys, the Dresden Branch also forecasts economic developments in eastern Germany and the Free State of Saxony for the current and the following year. These forecasts are released in June and December. The results are published both as a press release and as a contribution to the magazine *ifo Dresden berichtet* (Issues 1/2018 and 4/2018). They are also presented to the professional public in a press conference and at the ifo working group “Konjunkturbeobachtung Sachsen”. In this working group, members of ifo Dresden discuss business cycle developments in eastern Germany and the Free State of Saxony with Munich-based representatives of the ifo Institute, the German Federal Employment Agency, the Regional Employment Agency of the federal state of Saxony, the Statistical Bureau of the Free State of Saxony, representatives from various Saxon ministries, Creditreform, the Dresden chamber of trade and commerce and other associations. This year the working group met for the 41st and 42nd time.

Monitoring and forecasting eastern German business cycles

An important topic in 2018 was the potential restriction of international trade through tariffs and quotas. Against this backdrop, Niels Gillmann, Jannik Nauwerth and Michael Weber looked at the export structure of the Saxon economy. The article was published in issue 3/2018 of the magazine *ifo Dresden berichtet*.

In cooperation with the Helmut Schmidt University of Hamburg, the Branch is hosting the annual *ifo Dresden Workshop* on “Macroeconomics and Business Cycle Research”, which focuses on the research output of junior researchers. This year the 12th workshop took place on 26 and 27 January.

HUMAN CAPITAL, STRUCTURAL CHANGE AND THE POSITION OF SAXONY AND THE NEW LÄNDER IN LOCATIONAL COMPETITION

This field of work analyses regional and sectoral disaggregated growth and convergence processes. The focus is on comparative analyses of eastern and western Germany, as well as rural and urban areas. The research group’s aim is to propose policy options for adjusting the living conditions of regions that are lagging behind economically. Economic indicators are constantly monitored, e.g. on demographic change and the convergence progress of eastern German regions. Moreover, the research group focuses on relevant tendencies in education economics and the long-term causes of spatial socioeconomic differences.

The 8th *ifo Dresden Workshop* on “Regional Economics” took place on 20 and 21 September 2018. The workshop was jointly organised by Dr. Christian Ochsner (CERGE-EI und University of Zurich) and Prof. Christian Leßmann from the Technical University of Braunschweig.

On behalf of the Umweltbundesamt (UBA), *ifo Dresden* – together with the Wuppertal Institut für Klima, Umwelt, Energie gGmbH and the TU Dresden – is working on a case study on structural change in the Saxon region of Lusatia. This case study, which was launched in November 2016, examines the causes and effects of structural change processes. Previously implemented measures aimed at mitigating or fostering structural change in Lusatia will also be evaluated. The study will be completed in August 2019.

On behalf of the German Federal Ministry of Economic Affairs and Energy, *ifo Dresden* (together with the Mu-

nich-based *ifo* Institute and the University of Passau) is also evaluating differences in attitudes between eastern and western Germany.

In 2018 *ifo Dresden* continued to work on the project “Innovationswerkstatt Dresden” (Innovation Workshop Dresden), which it is conducting on behalf of the German Federal Ministry of Economic Affairs and Energy. The project is carried out in cooperation with the Helmholtz-Zentrum Dresden-Rossendorf (HZDR), University of Applied Sciences (HTW) Dresden and TU Dresden. Its main goal is to strengthen cooperation between basic research institutions and small and medium-sized enterprises. Katharina Heisig and Joachim Ragnitz are in charge of the economic analysis and the evaluation of new instruments. The project will be completed in February 2020.

ifo Dresden participated in another joint project on technology transfer from research institutions to businesses from August to December 2018. The project “Förderung der Validierung von Forschungsergebnissen im Freistaat Sachsen” (Funding the Transfer of Ideas into Marketable Products in Saxony) was conducted in cooperation with HZDR-Innovation, University of Applied Sciences (HTW) Dresden, and HighTech Startbahn GmbH Dresden on behalf of the State Ministry of Economic Affairs, Labour and Transport in Saxony. The research team’s results will provide the basis for future funding programmes in Saxony.

In two articles featured in *ifo Dresden berichtet* 1/2018, Christian Ochsner and Joachim Ragnitz present the key results of the study “Unternehmerische Wachstumsstrategien in den ostdeutschen Bundesländern” (Entrepreneurial growth strategies in the East German federal states). The articles deal with the growth prospects of eastern German companies. The study was carried out in cooperation with Rambøll Management Consulting and Creditreform Rating AG on behalf of the German Federal Ministry of Economics and Energy.

Christian Ochsner completed his dissertation: “Socioeconomic Persistence of Historical Shocks – Three Essays on Quantitative Economic History” in May 2018. Using digitised election and census data from Austria, he shows that regions that were liberated by the Red Army after World War II are still economically lagging behind neighbouring areas liberated by the Western Allies. To this day, regional electoral behaviour is also

Strengthening cooperation between research and SMEs

Historical shocks persist

influenced by the division of occupation zones after the Second World War and the mass migration that resulted from it.

In July 2018 Carolin Fritzsche successfully completed her dissertation: “On the Economics of Housing Markets and Urban Policy – Three Essays in Real Estate Economics”. Among other things, this thesis deals with the efficiency of rural districts in the provision of roads. Carolin Fritzsche identifies considerable efficiency reserves in eastern German rural districts, but also highlights that the results obtained depend strongly on the underlying estimation method and the database. These research results were published in the *German Economic Review* in 2018.

Lars Vandrei completed his dissertation on the “Economics of Housing Policy” in November 2018. In addition to housing vacancies and real estate transfer taxes, his dissertation deals with the effect of rent regulations on purchase prices. Lars Vandrei examines price regulations for both existing and new rental contracts, which have been introduced in selected municipalities in Brandenburg. His results show that apartments located in regulated municipalities lose over 20% in value. The results were published as ifo Working Paper No. 262; an executive summary in German can also be found in issue 6/2018 of *ifo Dresden berichtet*.

LABOUR MARKET AND SOCIAL POLICY IN SAXONY AND EASTERN GERMANY

In this research area, ifo Dresden focuses on how education policy and demographic trends affect labour market outcomes. This year’s emphasis lay on current policy-relevant topics, such as the inclusion and performance of children with special educational needs in schools. Initial research results were published in *ifo Dresden berichtet*.

Additionally, the research group organised the 8th ifo Dresden Workshop on “Labour Economics and Social Policy” (22-23 of March 2018), which was attended by both national and international participants.

David Bauer, Julia Sonnenburg and Michael Weber examined the public staff requirements due to retirement in the Free State of Saxony through 2030. They show that there could be a shortage of qualified workers. The shortage is expected to be more pronounced in the public sector than in its private counterpart. The study

was conducted on behalf of the Saxon State Ministry of Finance. Results were published in *ifo Dresden Studie* 81 and as a short summary in *ifo Dresden berichtet* 3/2018.

Furthermore, Katharina Heisig analysed the considerable differences in inclusion policies across federal states. The share of children graduating from a special-needs school without a regular school-leaving qualification differs significantly. Determinants of graduation rates are differing shares of children with special “intellectual development” needs, the ratio of pupils per teacher, and the intensity of transitions between special-needs schools and secondary schools. Results were published in *ifo Dresden berichtet* 05/2018 and in joint work with Jaqueline Hansen in *ifo Dresden berichtet* 6/2018.

INTEGRATION OF SAXONY AND EASTERN GERMANY INTO THE INTERNATIONAL DIVISION OF LABOUR

Economic integration between Saxony and its neighbours Poland and the Czech Republic was significantly fostered by the eastward enlargement of the European Union in 2004.

Jaqueline Hansen und Katharina Heisig published research results on the integration of Central and Eastern European (CEE) states into the European Union (*ifo Dresden berichtet* 05/2018). They show that EU enlargements had positive effects on trade relations between Germany and the accession countries. Federal states in eastern Germany benefitted disproportionately from CEE countries’ membership due to their historical trade relations and their geographical proximity to Eastern Europe. Exports from eastern Germany to CEE countries rose by 17% following the EU accession, while exports from western Germany increased by just 6%. A similar pattern can also be seen in imports. Economically stronger countries like Poland and the Czech Republic have seen sharp increases in their trade with Germany since joining the EU in 2004. The same can be said of Romania and Bulgaria.

PUBLIC FINANCE AND THE SUPPORT OF ECONOMIC DEVELOPMENT IN SAXONY

In 2018 the research area focused on local-level and state-level finance, as well as on political economy. As political landscapes around the world are changing, we need to learn more about voting decisions and political decision-making.

Rent regulations
impact the price of
housing

Felix Rösel is conducting a project concerning political extremism, which is financed by the German Research Foundation (DFG). The project started in June 2018 and will run for three years. Dr. Rösel examines causal relationships between social cohesion and the rise of right-wing populism in Europe. The project addresses the question of whether associations foster or prevent populism. The first article with Lasare Samartzidis “Wert- statt Geldmangel: AfD triumphiert im Osten dort, wo es an Toleranz und Vertrauen in die Politik fehlt” was published in *ifo Dresden berichtet*. Together with Niklas Potrafke Felix Rösel published a second article in the *Review of International Organizations*. The article shows that voter participation rises with extending the opening hours of polling stations. However, the longer opening hours almost exclusively increased votes for populist parties.

A study for the Federal Ministry of Economics and Technology (BMWi) examines the suitability of different indicators for the demarcation of structurally weak regions. The aim is to make a contribution to the future design of the regional funding policy in Germany. The experts propose that the existing set of indicators should be slightly modified to achieve a more appropriate demarcation of assisted areas. The study was prepared in cooperation with the Gesellschaft für Finanz- und Regionalanalysen (GEFRA) and the Bundesinstitut für Bau-, Stadt- und Raumforschung (BBSR).

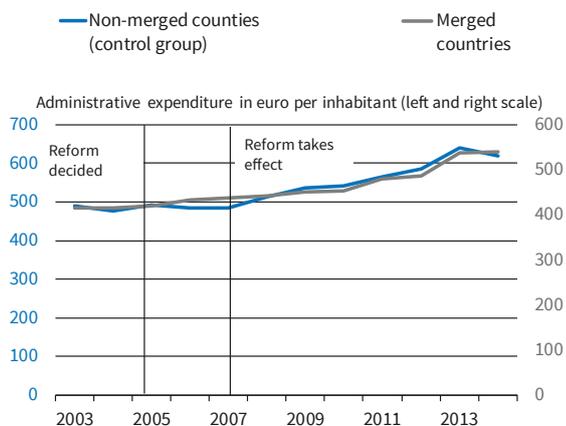
The provision of financial support remains a matter of outstanding importance to the Free State of Saxony. The federal state will face further reductions of financial support from both the federal government and from the European Union for its operational programmes after the year 2020. David Bauer, Christian Ochsner und Joachim Ragnitz recommended adjustments in the Saxon funding policy to the State Chancellery of Saxony. The authors conducted a SWOT analysis on the strengths, weaknesses, opportunities and threats to the Saxon economy. Based on this analysis, considerations on the evaluation of the current funding policies and the adequate implementation of Saxon funding policies after 2020 were discussed. The evaluation is based on efficacy and economic efficiency of the funding programmes. The results of the analysis were published as *ifo Dresden Studie 82* and in issue 3/2018 of *ifo Dresden berichtet*.

David Bauer and Joachim Ragnitz published an article in *ifo Dresden berichtet* on the effectiveness of benchmarking concerning the workforce in federal states. Due to the heterogeneous division of state and municipal responsibilities across federal states, naïve comparisons based on benchmarks may be misleading.

Benchmarking comparisons can mislead

Questions of municipal structures were also addressed in 2018. Felix Rösel and Sebastian Blesse of ZEW Mannheim show that territorial reforms had hardly any fiscal impact, but may have impaired the functioning of democracy at the local level. The results were published in *Local Government Studies*. Another article on the subject was published in 2017 and was honoured with the “Prize in federalism research and regional science” (Austrian federalism prize).

Territorial Reforms Have Hardly any Fiscal Impact



Note: The figure shows the average administrative expenditure in the nine counties of Saxony-Anhalt merged in 2007 (right scale) and the two non-merged counties (left scale). Administrative expenditure includes personnel, material, rental, maintenance and interest expenses. Source: ifo Institute. © ifo Institute

Regional disparities are a matter of great political interest and an issue that is also addressed by ifo Dresden. In an article published in *ifo Dresden berichtet* on the effect of municipal autonomy, Xenia Frei and Felix Rösel highlight that the impact of autonomy on local growth is fairly small. In an article for *Jahrbuch für Öffentliche Finanzen* the authors find no evidence for increasing disparities between German cities since 1950.

Impact of autonomy on local growth is low

In June 2018 Felix Rösel became a member of the “Junge Rentenkommission”, which is organised by DIE JUNGEN UNTERNEHMER. The committee will critically evaluate and comment on the pension policies implemented by the federal government.

Projects Completed in 2018

Human Capital, Structural Change and the Position of Saxony and the New Länder in Locational Competition Research Area

Germany 2017 (Deutschland 2017)

J. Ragnitz, ifo Center for Labour and Demographic Economics for the German Federal Ministry for Economic Affairs and Energy, March 2016 to March 2018.

The main goal of this study is to investigate the current attitudes of Germany's citizens. The preceding study "Germany 2014" described the development of attitudes of German citizens in the east and west from the time of separation until 2014. Building on this work, the new study extends the analysis to include the most recent data. Apart from a purely descriptive analysis of attitudes towards politics, the economy, values, norms and identities, as well as the current challenges faced by society, it also examines their determinants. In the first part of the project, a literature review summarises recent research at the intersection of economics, sociology, psychology and political science. The second part concentrates on an empirical analysis using a variety of different datasets.

Calculation and Projection of the Productivity and Innovation Gaps of the German Federal States

R. Lehmann, N. Gillmann, J. A. Nauerth, J. Ragnitz, J. Sonnenburg, M. Weber for the Bertelsmann Foundation, June 2018 to October 2018.

The working population in Germany will shrink in the coming decades. This process will negatively impact economic growth. The growth of the production potential of the German economy could halve by 2035. Since the size of the total population is decreasing more slowly than the working age population, the decrease in the growth rate may also slow down the rise in living standards. There is significant heterogeneity regarding growth potential across regions due to differences in demographic developments. In the long term, this could endanger the convergence process between weak and strong economic regions. Slower growth in production potential could only be overcome by a stronger increase in total factor productivity via increased innovative activity, for example.

Demographic
change could
endanger
economic
convergence

Funding the Transfer of Ideas into Marketable Products in Saxony

K. Heisig, J. Ragnitz in cooperation with HighTech Startbahn GmbH Dresden, HZDR Innovation GmbH Dresden and HTW Dresden for the State Ministry of Economic Affairs, Labour and Transport in Saxony, July 2018 to December 2018.

By national and international comparison, Saxony's research landscape is relatively strong, but the transfer potential of research results in Saxony is insufficiently exploited. As a result, promising research results are too infrequently used in applications and thus the positive effect on Saxony's competitiveness is lower than it could be. One key factor in the missing implementation of research results could be the absence of adequate sources of funding. Against this background, the research team prepared a scientific report that will form the basis of future funding programmes in Saxony.

Labour Market and Social Policy Research Area

Public Staffing through 2030 in the Free State of Saxony and the Competitive Situation to the Private Sector

D. Bauer, J. Sonnenburg, J. Ragnitz, M. Weber for the Saxon State Ministry of Finance, April 2017 to February 2018, publication as *ifo Dresden Studie* 81, ifo Institute, Munich, Dresden, 2018, and in *ifo Dresden berichtet* 3/2018.

The Free State of Saxony's public sector is facing demographic challenges. Between 2015 and 2030, nearly half of the workforce in Saxony's public sector will retire. In light of demographic developments in Saxony, filling these vacancies with younger workers may well prove very difficult. The public sector and the private sector will be competing for the same groups of skilled workers in some areas. On behalf of the Saxon State Ministry of Finance, ifo Dresden investigated the future challenges of filling vacancies in the Saxon job market. This analysis was conducted at the level of qualifications, occupations and economic sectors. The study sought to identify the domains in which the private sector and the public sector are in competition. It also investigated the potential effectiveness of various personnel strategies in the public sector. For instance, the potential for reducing overcapacities among public staff were evaluated. Moreover, we examined the effects of market adjustment processes and technological and structural changes.

Public Finance and Support of Economic Development in Saxony and the New Länder Research Area

Economic Studies

J. Ragnitz in cooperation with the ifo Center for Industrial Organisation and New Technologies for the Chamber of Industry and Commerce (IHK) of Munich and Upper Bavaria, April 2018, publication *DICE-Report 3/2018*.

On behalf of the Chamber of Industry and Commerce (IHK) of Munich and Upper Bavaria, the ifo Institute is working on a large-scale project that provides independent, scientifically sound economic advice. Within the framework of this project, ifo is involved in the preparation of economic studies (meta-analyses, empirical policy evaluations, implementation and evaluation of surveys, etc.), the conception and implementation of events oriented towards economic policy, as well as the implementation of a regular exchange of knowledge on economic policy topics.

All of the ifo research centers are involved in this project. In the year under review, the Dresden Branch drew up a statement on the future orientation of EU Structural Fund funding (ESI funding) with a special focus on Bavaria. Against the backdrop of the current preparations for the forthcoming funding period (2021–2028), it examined how (and whether) the provision of EU Structural Funds for economically strong regions can be justified by economic reasons; and how funding successes to date can be assessed. Apart from the fiscal interest of the Free State of Bavaria in financial participation of the EU in country-specific support programmes, there are hardly any good reasons for EU support in economically strong regions. In accordance with the subsidiarity principle, support programmes should better be left to the respective regions themselves. In addition, the “European added value” of the projects carried out seems to be rather low. At best, EU participation in country-specific funding programmes can be justified with regard to cooperation projects between Bavaria and its European neighbours.

Strategies for the Best Equipment and Use of Funds after 2020

D. Bauer, C. Ochsner, J. Ragnitz for the State Chancellery of Saxony, April 2017 to March 2018, publication as *ifo Dresden Studie 82*, ifo Institute, Munich, Dresden, 2018, and in *ifo Dresden berichtet 3/2018*.

The Free State of Saxony will face further reductions of financial support from both the federal government and the European Union for its operational programmes after 2020. ifo Dresden recommended adjustments in the Saxon funding policy to the State Chancellery of Saxony. The authors conducted a SWOT analysis on the strengths, weaknesses, opportunities and threats for the Saxon economy. Based on this analysis, adequate implementation of Saxon funding policies after 2020 was discussed. The valuation was based on the efficacy and economic efficiency of the funding programmes.

Demographic Change, Urbanisation, and the Costs of Public Services in Municipalities

X. Frei, J. Ragnitz, F. Rösel for the KfW Group Frankfurt/Main, September 2016 to December 2017, publication as *ifo Dresden Studie 80*, ifo Institute, Munich, Dresden, 2018, and in *ifo Dresden berichtet 2/2018*.

Demographic change in Germany will affect society and the public sector in many ways. This project for the KfW group examined the relationship between demographic change, urbanisation, and the costs of public service provision. ifo Dresden investigated whether increases and decreases in population size affect public expenditure asymmetrically.

Regional Indicators for the Preparation and Redefinition of the GRW Assisted Area from 2021 (Spatial Observation)

J. Ragnitz in cooperation with GEFRA Gesellschaft für Finanz- und Regionalanalysen Münster for the German Federal Ministry of Economic Affairs and Energy, December 2017 to July 2018.

In its present coalition agreement, the CDU/CSU and SPD agreed to redesign regional policies using a unified system of indicators for the whole of Germany. The model for this should be the joint task “Improvement of the Regional Economic Structure” (GRW). The GRW indicator for the demarcation of structurally weak and therefore eligible regions currently comprises an income indicator (gross wage per employee), two labour market indicators (unemployment rate and medium-term forecast of employment development) and a summarised infrastructure indicator. The aim of the research project was to examine the suitability of these indicators for demarcating structurally weak regions and, if necessary, to propose alternative demarcation criteria.

Indicators for demarcating structurally weak regions

The current GRW indicators show a number of conceptual weaknesses and should therefore be revised. After examining a large number of alternative indicators, the proposal was made to use gross domestic product per employed person as the income indicator, and the more broadly defined underemployment rate as the labour market indicator. This could be supplemented by an indicator on demographic development (e.g. projection of population development through 2035) and a modified infrastructure indicator. Applying such an indicator system, eastern German regions in particular but also old industrial areas in western Germany are classified as eligible for support.

There are plans to release the research results as a publication of the German Federal Ministry of Economics and Technology, as an *ifo Dresden Studie* and in an article for *ifo Dresden berichtet* at the beginning of 2019.

Current Projects

Business Cycle and Growth in Saxony and the New Länder Research Area

Quarterly Business Cycle Report for Saxony-Anhalt

J. A. Nauwerth, J. Ragnitz, M. Weber for the Ministry of Science, Economics and Digitalisation of Saxony-Anhalt, January 2016 to March 2019.

German official statistics provide data on the development of gross domestic product (GDP) and gross value added (GVA) for Germany and each of its 16 states. German data is published on a quarterly basis, but state-level time series are released only once a year. *ifo Dresden* calculates quarterly GDP and GVA data for the state of Saxony-Anhalt on behalf of the Ministry of Science, Economics and Digitalisation of Saxony-Anhalt. The calculation combines official GVA data with quarterly and monthly time series using the Chow-Lin method. The same method is employed by Eurostat for GDP data in European regions and by the *ifo* Institute to generate quarterly GDP and GVA data for the Free State of Saxony. The Quarterly Business Cycle Report for Saxony-Anhalt is published on *ifo's* website.

Combining annual gross value added data with quarterly and monthly time series

Human Capital, Structural Change and the Position of Saxony and the New Länder in Locational Competition Research Area

Structural Change in Coal Regions as a Process of Economic and Socioeconomic Transitions – Opportunities for Socially Compatible Structural Change in the Light of Climate Policy Goals

J. A. Nauwerth, J. Ragnitz for the Wuppertal Institute for the Umweltbundesamt (UBA), November 2016 to August 2019.

The economic and industrial structure of Lusatia, a region in southern Brandenburg and eastern Saxony, is characterised by the mining and energy sectors. Before German reunification, over half of the employees of Lusatia worked in these sectors. With the collapse of former GDR, employment in this region dropped sharply. Structural change in Lusatia is an ongoing process. Climate policy measures have speeded up the retirement of coal-fired power plants, thus triggering further structural changes. On behalf of the Umweltbundesamt (UBA), *ifo Dresden* – together with the Wuppertal Institut für Klima, Umwelt, Energie gGmbH – is working on a case study of historical structural change in Lusatia. It examines the causes and impacts of structural change processes and evaluates previously implemented measures, which aim to mitigate or foster structural change in the region.

Innovation Workshop Dresden – Joint Project: Strengthening the Cooperation of Basic Research Institutions and Small and Medium-Sized Enterprises (SMEs) – Subproject: Economic Analysis and Evaluation of New Instruments

K. Heisig, J. Ragnitz, Deutsches Zentrum für Luft- und Raumfahrt (DLR) for the German Federal Ministry of Education and Research, March 2017 to February 2020.

Entrepreneurial innovation activities are crucial to a country's successful economic activity. In Germany, the majority of businesses are small and medium-sized enterprises (SME), whose overall innovation activity is declining. The major obstacles to investing in research and development (R&D) for SMEs are problems in hiring qualified personnel, in implementing innovation management, and high economic risk. R&D expenditure by publicly financed basic research institutions in Germany, by contrast, has been increasing in recent

years. Research institutions are increasingly making an effort to improve knowledge transfer to enterprises. However, SMEs are still underrepresented in these joint R&D activities. The focus of this project lies on SMEs in Dresden and its surrounding area. It aims to implement strategies for giving SMEs access to the R&D know-how of fundamental research institutions and universities. The project seeks to encourage SMEs to use the existing research infrastructure, qualified personnel and expertise in market development. This project is conducted in cooperation with the Helmholtz-Zentrum Dresden-Rossendorf (HZDR), University of Applied Sciences (HTW) Dresden, and TU Dresden.

Industry Reports

C. Boede, U. Mandalka for the Volks- und Raiffeisenbanken, ongoing since 2006.

As part of the “*Branchen special*” project, analyses and forecasts are provided for the structure of various industry sectors, their business prospects, profits and competitiveness. The information featured in these special reports can indicate intermediate-term prospects for respective sectors, as well as opportunities and risks arising from structural transformation. The “*Branchen special*” reports are employed primarily by cooperative banks in their lending and consulting business. Company consultants are provided with a survey of the prospects and risk profiles of individual sectors.

Public Finance and Support of Economic Development in Saxony and the New Länder Research Area

Local Social Capital and the Rise of Right-wing Populism

F. Rösel for the Deutsche Forschungsgemeinschaft (DFG), June 2018 to June 2021.

Western societies have seen a rapid surge in right-wing populism in recent years. Studies show that voters in once booming, but now declining industrial “rust belts” are particularly supportive of populist movements. In times of rapid change, strong and reliable local networks and identities (social capital) may provide solidarity and eliminate breeding grounds for populism. However, if associations such as sports clubs are closely knit and exclusive, they may also foster and

spread populism even more rapidly. Evidence supporting or contradicting this hypothesis is scarce, especially when it comes to causal effects. This project aims to investigate the relationship between social capital and right-wing populism. Felix Rösel exploits quasi-natural experiments in several European countries using modern econometric identification strategies (difference-in-differences estimations, fuzzy and sharp regression discontinuity design, and an instrumental variable approach).

Evaluating the Economic Eligibility of Subsidy Applications on behalf of the Federal State of Brandenburg

D. Bauer, J. Ragnitz, F. Rösel for the Ministry for Economic Affairs and Energy of the Federal State Brandenburg, March 2016 to March 2020.

On behalf of the Ministry for Economic Affairs and Energy of the Federal State of Brandenburg, ifo Dresden evaluates the economic eligibility of applications for financial support. The relevance of the applicant company is evaluated in terms of gross value added, local labour market relevance and productivity.

Evaluation of the Operational Programme of the Free State of Saxony for the European Regional Development Fund in the Funding Period from 2014 to 2020

J. Ragnitz for the GEFRA for the Saxon State Ministry for Economic Affairs, Labour and Transport, November 2016 to August 2019.

From 2014 to 2020, the Free State of Saxony will receive 2.1 billion euros from the European Regional Development Fund (ERDF). According to the European Union’s guidelines, the programme has to be evaluated with regard to its effectiveness, efficiency and impact. This evaluation constitutes the focus of this project, which also provides ad hoc assessments of proposed amendments to the so-called operational programme.

The project is carried out jointly by ifo Dresden, the Institute for Financial and Regional Analyses (GEFRA), the Joanneum Research Forschungsgesellschaft, and Dr. Stefan Meyer from Kovalis.

Interplay between social capital and right-wing populism

Effectiveness of European regional development funding

Munich Society for the Promotion of Economic Research – CESifo GmbH

CESifo GmbH (official name: Münchener Gesellschaft zur Förderung der Wirtschaftswissenschaft – CESifo GmbH, i.e. Munich Society for the Promotion of Economic Research) links the Department of Economics of the Ludwig Maximilian University (LMU Munich) and the ifo Institute with the international economic research community. CESifo GmbH is a private corporation founded in 1999 and owned in equal parts by the ifo Institute and LMU Munich. The main tasks of CESifo GmbH include:

- support of exchanges between the LMU and the ifo Institute and the promotion of junior economists
- administration of the worldwide CESifo Research Network
- analysis of economic events in the European Union and stimulation of the debate over European economic policy
- publication of economic research
- organisation of conferences and seminars

EXCHANGES BETWEEN THE LMU AND THE IFO INSTITUTE

CESifo GmbH supports the active participation of researchers from the LMU and the ifo Institute in various academic conferences.

The joint appointment of professors, who both work at the ifo Institute and have a chair at the LMU, remains particularly important. These endowed professorships are a key way of attracting outstanding researchers to become Center Directors at the ifo Institute and take up chairs at the LMU. These joint appointments strengthen not only the links between the ifo Institute and the LMU in research, but also in the teaching and promotion of Ph.D. students. A total of eight endowed professorships have been jointly established by the ifo Institute and the LMU to date, with CESifo GmbH contributing to the financing of two of them.

RESEARCH NETWORK

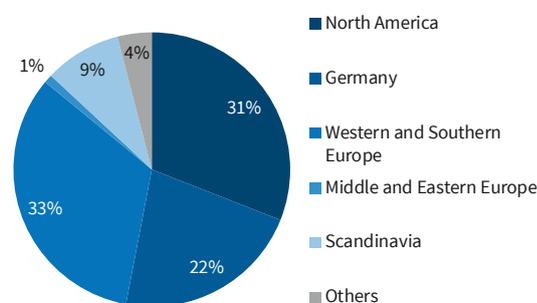
The CESifo Research Network aims to bring researchers with common research interests into contact with one another and to promote cooperation between network members and Munich-based researchers via events and publications. The network is primarily composed of economists with a proven track record in their

respective field and who have been invited to visit CES or the ifo Institute as a guest researcher on the basis of a refereed selection procedure. The CESifo Research Network continued to expand in 2018 and totalled 1,564 members by 31 December 2018, making it one of the biggest networks of this kind in the world.

The CESifo Research Network’s membership comprises 1,100 fellows and 446 affiliates. Fellows are senior researchers who typically hold a full professorship at a university, while affiliates are ambitious young researchers who wish to join the network at the early stages of their career. Most of the fellows come from Europe and North America. However, the network also has members in a large number of other countries, which ensures that CESifo products are well known and used worldwide. The network members come from over 40 countries and their fields of expertise span most areas of economics.

One of the world’s biggest researcher networks

CESifo Research Network Members by Region



Source: CESifo.

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To promote an intensive exchange of ideas between its members, the network is subdivided into several areas. These are headed by internationally renowned economists, or so-called “Area Directors”, who contribute to the network with their international standing and expertise.

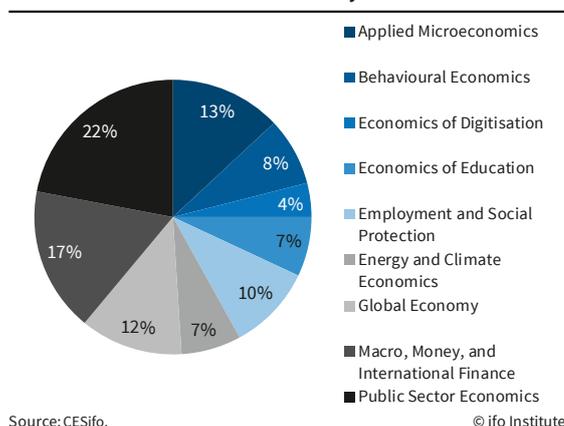
The network’s area directors are:

- Christian Gollier, University of Toulouse, Area Director of Applied Microeconomics
- Ernst Fehr, University of Zurich, and Klaus Schmidt, LMU, Area Directors of Behavioural Economics
- Stephen P. Ryan, Washington University in St. Louis, Area Director of Economics of Digitalisation

- Eric Hanushek, Stanford University, Area Director of the Economics of Education
- Kai A. Konrad, Max Planck Institute for Tax Law and Public Finance, Munich, Area Director of Employment and Social Protection
- Michael Hoel, University of Oslo, Area Director of Energy and Climate Economics
- Peter Egger, ETH Zurich, Area Directors of Global Economy
- Markus Brunnermeier, Princeton University, Area Director of Macro, Money and International Finance
- Rick van der Ploeg, University of Oxford, Area Director of Public Sector Economics

The international reputation of the Area Directors has boosted the attractiveness of the CESifo Research Network, which is reflected in its growing number of members.

CESifo Research Network Members by Research Area



CESifo GmbH provides network members with CESifo publications. It organises numerous international conferences. The annual Area Conferences provide a platform for lively discussions among network members. As part of each of the Area Conferences, the “CESifo Distinguished Affiliate” prize has annually been awarded to a young economist since 2008. The aim of this prize is to identify promising young researchers and to establish early links to the CESifo Network.

Prize for promising young researchers

The CESifo Distinguished Affiliates of 2018 were:

- Applied Microeconomics: Anna Sanktjohannser, Yale University
- Behavioural Economics: Teodora Boneva, University of Oxford
- Economics of Digitalisation: Vegard Høghaug, Norge Bank, Oslo
- Economics of Education: Jason B. Cook, University of Pittsburgh, Ulf Zölitz, University of Zurich
- Employment and Social Protection: Ruixue Jia, University of California, San Diego, Melanie Wasserman, University of California, Los Angeles
- Energy and Climate Economics: Stephie Fried, Arizona State University
- Global Economy: Kevin Lim, University of Toronto
- Macro, Money and International Finance: Qunetin Vandeweyer, Sciences Po
- Public Sector Economics: Uwe Thuemmel, University of Zurich

The close links between Munich-based researchers and external researchers are further strengthened by its **visitor programme**. In 2018, 44 international researchers were welcomed at the ifo Institute and another 20 guest researchers at CES in order to initiate or continue joint projects with Munich-based researchers. The programme is closely linked to the evolution of the research network, as a successful visit is typically a prerequisite for any invitation to join the network.

ANALYSIS OF ECONOMIC DEVELOPMENTS IN THE EU AND PARTICIPATION IN THE EUROPEAN ECONOMIC POLICY DEBATE

EU topics are becoming increasingly important to the future of Europe’s citizens. Discourse at the European level, which centres on Brussels, is leading to a new political reality that is changing Europe. It is important for economists to participate in this discourse, as much of what happens has an economic dimension, costs a lot of money and leads to fiscal redistribution in Europe. CESifo GmbH was founded to provide economic policy impulses at the European level and the latter’s importance is growing steadily.

As part of CESifo's activities, numerous documents have already been released in past years that engage critically with possible developments in the EU, and especially in the euro area. Network members, as well as CES and ifo staff, have engaged intensively in the European debate, which is gradually shaping a new form of state.

A particularly important role in this debate has been played by the **European Economic Advisory Group at CESifo**. The EEAG is a European council of economic experts that provides policymakers and the general public with an independent and science-based assessment of current economic developments in the EU. The EEAG is unique in both its composition and its focus. This year's council members are outstanding economists from several European countries and the US, namely:

- Torben Andersen, Aarhus University
- Giuseppe Bertola (Vice-Chairman), University of Turin
- John Driffill (Chairman), Birkbeck College, University of London
- Harold James, Princeton University
- Clemens Fuest, LMU Munich – ifo Institute
- Jan-Egbert Sturm, KOF, ETH Zurich
- Branko Urošević, University of Belgrade

The EEAG releases an annual report in which it not only analyses the current state of the European economy, but also provides an in-depth evaluation of several other economic policy issues of topical importance for Europe.

As in previous years, the EEAG Report was presented at press conferences in a number of European cities. Detailed articles in leading European newspapers and interviews on major TV channels reflect the need for science-based economic policy analyses. Like every year, the report was also sent to policymakers and experts in science, economics and politics across Europe.

A preview of the results of the EEAG Report 2019 was presented at the EconPol Europe founding conference in Brussels, 19–20 November. This event brought together around 200 high-profile researchers, politicians, experts and journalists to exchange their ideas on the economic and institutional development of the EU and the Eurozone.



Various ifo research centers contribute to the report with background research, as well as to the editing and typesetting process. The European economic forecast is prepared almost entirely by the ifo Institute.

In 2018, the **Munich Economic Summit (MES)** was organised in close cooperation with the ifo Institute. The summit is an international policy forum for in-depth discussion of European economic policy issues. Its programme features top-class and insightful speeches, intensive talks in interactive sessions, and a forum for professional exchange.

The 2018 Summit under the topic “Reshaping Europe” dealt with issues like Europe’s role and competitiveness in an uncertain and digital world, the stability of the financial sector, governance of the European Monetary Union and Eurozone fiscal policy, as well as the internal constitution, future role and (dis-)integration process of the EU.

The 2018 Summit was made possible by the generous support of GLL Real Estate Partners, vbw, BMW Group, Deutsche Telekom AG, EY, VDMA, Swiss Re, BayernLB and Fabricius Vermögensverwaltung.

In-depth discussion of European economic policy issues

The **Munich Seminars**, jointly organised by CESifo and the *Süddeutsche Zeitung*, one of Germany's leading dailies, are also part of the regular event calendar. Their popularity among guests from business, public administration, academia and the press demonstrates the overwhelming demand for accessible discussion of economic problems and solutions. In 2018 a total of 14 Munich Seminars were organised. Full reports on most Munich Seminar lectures are published in *Süddeutsche Zeitung*, making their findings accessible to a wide readership. This, in turn, enhances the standing of the Munich Seminars and helps to attract renowned personalities as speakers.

CONFERENCES AND EVENTS

As in past years, a major focus of CESifo GmbH's activities was the organisation and administration of academic conferences. With the goal of strengthening Munich's standing as an excellent science and research location and supporting empirical and theoretical research in economics, CESifo (co-)organised 25 scientific conferences and events in 2018.

CESifo hosts two different types of conferences. In addition to the established annual **nine area conferences** relating to the individual areas of the CESifo Research Network, CESifo also hosts conferences that are initiated and supported by network members and deal with topical issues in the field of economic research. These include, for example, the CESifo Venice Summer Institute.

The **CESifo Venice Summer Institute** has become a tradition in the CESifo event calendar and has earned a solid reputation among international economists. In 2018, the Venice Summer Institute comprised five workshops, dealing with the following topics:

- “Country Clubs”, organised by Clemens Fuest and Daniel Gros (in cooperation with EconPol Europe)
- “Globalisation and Populism”, organised by Sascha O. Becker and Thiemo Fetzer
- “International Tax Reform-Challenges for Trade Integration and Implications for International Tax Coordination”, organised by Johannes Becker and Niels Johannesen
- “Evidence-Based Policy Advice: How it is Produced and Used”, organised by Florian Englmaier, Monika Schnitzer and Joachim Winter (in cooperation with the Center for Advanced Studies (CAS) at LMU Munich)

- “Expectation Formation”, organised by Michael Weber and Theresa Kuchler

The **Musgrave Lecture** in honour of Richard Musgrave was a special highlight in 2018. The associated prize is awarded to an internationally renowned economist working in the area of public finance, following a selection by the President of the ifo Institute and the President and Vice-Presidents of the International Institute of Public Finance (IIPF). Prof. Michael P. Devereux (Oxford University) was awarded the prize in 2018 and delivered a lecture entitled: “Taxing Profit in a Global Economy.”

Supporting
empirical and
theoretical
economics research
in Munich



Prof. Michael P. Devereux

In addition, CESifo organised or assisted partner organisations with several of their scientific events including:

- “EconPol Europe PhD Workshop: Economic and Fiscal Policy in Europe”, with EconPol Europe
- “Doctoral Workshop on the Economics of Digitization”, with ParisTech, Universities of Toulouse, Liège and Leuven

- “CESifo Delphi Conference”, with University of Athens
- “Chiemsee-Conference”, with vbw and Hans-Martin-Schleyer-Foundation
- “CEMIR Workshop”, with ifo Institute
- “Subjective Expectations” with LMU Munich
- “Conference in Celebration of 75th Birthday of Eric A. Hanushek”, with University of Texas and Hoover Institution
- “CESifo Economic Studies Conference on New Perspectives on Tax Administration Research”
- “Workshop on Political Economy”, with Technical University of Dresden and ifo Dresden
- “ifo Macroeconomics and Survey Data”, with ifo Institute

These international conferences offer Munich-based researchers an opportunity to interact with researchers from all over the world and establish cooperations. Furthermore, the events promote the international reputation of Munich as an economic research location.

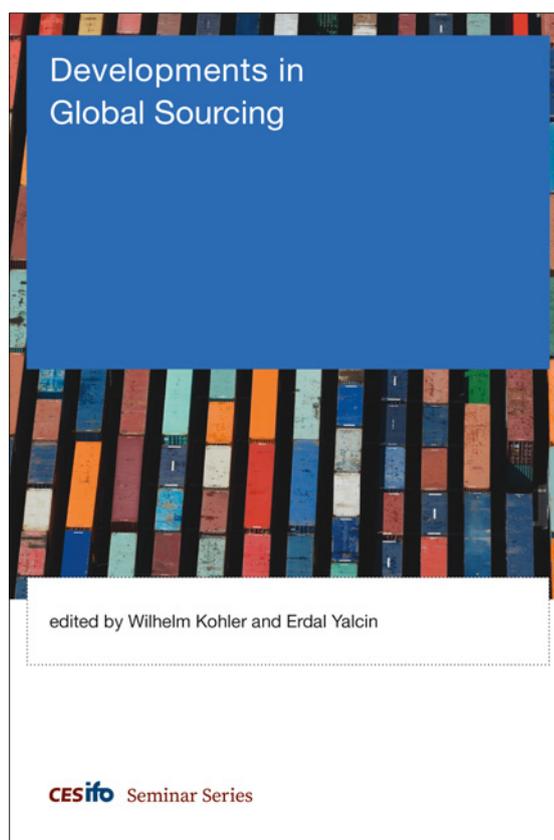
PUBLICATIONS

CESifo has developed a number of publications aimed at contributing to the discussion of economic issues in Europe. An important role is played by the **CESifo Working Paper Series**, which disseminates the early-phase findings of academic research conducted by network members, making them available for professional discussion.

In 2018, 601 papers were published in this series. All papers are distributed electronically via the CESifo Group’s website and various online databases including SSRN (Social Sciences Research Network), RePEc (Research Papers in Economics), and Econstor (Open Access server of the German National Library of Economics – Leibniz Information Centre for Economics).

The **CESifo Newsletter**, distributed electronically, provides up-to-date information and commentary for a wide spectrum of readers, ranging from academics to members of the European Commission and the media. It also reports on CESifo events and provides articles on selected CESifo Working Papers in a form that is easily accessible to the non-specialist reader.

CESifo has two book series with MIT Press: the CESifo Seminar Series and the CESifo Book Series. All books cover a topical policy issue in economics and are subjected to a careful, multi-stage refereeing process. In 2018, three new books were published on “The Economics of Philanthropy”, “The Taxation of Pensions” and “Developments in Global Sourcing”.



CESifo Seminar Series

The CESifo Group website is a portal of choice in its field. It contains a wealth of information on the entire range of products and activities of CES, ifo and CESifo as far as conferences, seminars and publications are concerned, and offers a wide spectrum of further topics that are of interest to economists, politicians and the business community. More detailed information on the website is provided in the Press, Publications, Conferences section.

In short, the research cooperation between the ifo Institute, the LMU and the international scientific com-

**Unique platform for
European exchange**

munity continued to flourish very successfully in 2018. The CESifo research network provides a unique platform in Europe for exchange among economists and for public discourse. It has now secured an outstanding international reputation that extends well beyond European borders. In light of the epochal changes that are taking place in the EU, this kind of platform is now more important than ever before.

Further details of CESifo's activities can be found in the German online version of the Annual Report on pages 231–251 (<http://www.cesifo-group.de/Jahresbericht>).

Conferences, Publications and External Relations of the ifo Institute

Information on the ifo Institute's events, publications, teaching activities and links to institutions/individuals, as well as further details of CESifo's activities can be found in the German online version of the Annual Report on pages 165–251 (<http://www.cesifo-group.de/Jahresbericht>).

CONFERENCES

Besides regular events, like the Annual Meeting, Euroconstruct, ifo Industry Colloquium (ifo Branchen-Dialog), a number of special conferences, workshops and press conferences were held during 2018. These included:

- SEEM – Seminar on Energy and Environmental Economics “An Electricity Market with Zero (Marginal) Costs”
- Workshop on “Macroeconomics and the Business Cycle”
- Workshop “EGIT – Economic Geography and International Trade Research Meeting”
- SEEM – Seminar on Energy and Environmental Economics “The Risks that Farmers Take: An Experiment on Externalities with Individual Thresholds Inspired by Fertiliser Use”
- Symposium “Bubbling Revenues, Major Challenges”
- “Expectations of a Sustainable Fiscal and Financial Policy”
- Workshop on “Labour Market and Social Policy”
- Research Seminar “Economics of Education”
- ifo CEMIR Seminar on “Regional Media Reporting and Xenophobic Events in the Course of the Refugee Crisis”
- SEEM – Seminar on Energy and Environmental Economics “Efficient Storage Operation and Investments – Analytics of the Electricity Market”
- ifo CEMIR Seminar on “Child Labour and the Arrival of Refugees: Evidence from Tanzania”
- SEEM – Seminar on Energy and Environmental Economics “Strategic Delegation in the Formation of International Environmental Agreements”
- 18th Doctoral Meeting on International Trade and International Finance
- Munich Economic Summit “Reshaping Europe”

- SEEM – Seminar on Energy and Environmental Economics “Cumulative Carbon Emissions and Economic Policy: In Search of General Principles”
- “Sardinia Empirical Trade Conference”
- Workshop on “Regional Economics”
- SEEM – Seminar on Energy and Environmental Economics “Integrated Assessment in a Multiregion World with Multiple Energy Sources and Endogenous Technical Change”
- Conference on “Macroeconomics and Survey Data”
- Conference on “Heterogeneous Agents and the Macroeconomics of Climate Change”

Lunchtime Seminars are held on a weekly basis. They serve the purpose of putting current research and new economic developments up for discussion. Participants are researchers from the ifo Institute, CES, the University of Munich and CES visitors.

In 2018 a large number of ifo staff members gave 246 papers and presentations at external conferences.

PUBLICATIONS

ifo publications include:

- *ifo Schnelldienst* – a journal on policy issues, research results and forecasts; twice monthly
- *ifo Konjunkturperspektiven* – a monthly publication presenting in detail the results of the ifo Business Survey
- *ifo Dresden berichtet* – a bi-monthly report on the economy, structure and economic policy in the Free State of Saxony
- *CESifo Forum* – a quarterly English-language magazine focusing on major current topics of international interest, including European policy issues and economic trends
- *ifo DICE Report* – a quarterly English-language journal for institutional comparisons
- *ifo World Economic Survey* – a quarterly English-language journal publishing the results of the ifo Institute's quarterly poll of international economic activity

- *CEifo Economic Studies* – a quarterly refereed journal in economics
- *ifo Beiträge zur Wirtschaftsforschung* – a series in which important research projects of the ifo Institute are published
- *ifo Forschungsberichte* – other studies of the Institute are documented in this series and made available to the public
- *ifo Dresden Studien* – studies of the ifo Dresden Branch that deal primarily with topics affecting the new German federal states and their eastern neighbours
- *ifo Working Papers*

TEACHING AND EXTERNAL RELATIONS

A number of ifo staff taught or presented lectures at universities in 2018:

Andrea Ariu, Ph.D., University of Munich
 Benjamin Arold, University of Munich
 David Bauer, Dresden University of Technology
 Martin Braml, University of Munich
 Katharina Candel-Haug, University of Applied Sciences, Munich, and University of Munich
 Dr. Anna Sophia Ciesielski, University of Munich
 Dr. Markus Drometer, University of Munich
 Marc Fabel, University of Munich
 Dr. Thomas Fackler, University of Munich
 Prof. Oliver Falck, University of Munich
 Prof. Gabriel Felbermayr, Ph.D., University of Munich
 Prof. Dr. Dr. h.c. Clemens Fuest, University of Munich
 Dr. Yvonne Giesing, University of Munich
 Dr. Jasmin Gröschl, University of Munich
 Eleonora Guarnieri, University of Munich
 Dr. Christa Hainz, University of Applied Sciences, Munich
 Franziska Hampf, University of Munich
 Alexandra Heimisch, University of Munich
 Julia Heller, Dresden University of Technology
 Dr. Christian Holzner, PD, University of Munich

Paul Hufe, University of Munich
 Lea Immel, University of Munich
 Dr. Björn Kauder, University of Munich
 Dr. Robert Lehmann, Deggendorf Institute of Technology
 Philipp Lergetporer, Ph.D., University of Munich
 Valentin Lindlacher, University of Munich
 Christina Littlejohn, University of Munich
 Thomas Lohse, University of Munich
 Andreas Mazat, University of Munich
 Prof. Volker Meier, University of Munich
 Prof. Chang Woon Nam, University of Applied Sciences, Ismaning
 Dr. Till Nikolka, Macromedia University of Applied Sciences, Munich
 Prof. Andreas Peichl, University of Munich
 Dr. Marc Piopiunik, University of Munich and University of Freiburg
 Prof. Karen Pittel, University of Munich
 Prof. Niklas Potrafke, University of Munich
 Prof. Panu Poutvaara, Ph.D., University of Munich
 Prof. Joachim Ragnitz, Dresden University of Technology
 Prof. Helmut Rainer, Ph.D., University of Munich
 Dr. Sven Resnjanskij, University of Munich
 Dr. Felix Rösel, Dresden University of Technology
 Alex Schmitt, Ph.D., University of Munich
 Dr. Tobias Schuler, University of Applied Sciences, Coburg
 Julia Sonnenburg, Dresden University of Technology
 Marc Stöckli, University of Munich
 Daniel Stöhlker, University of Munich
 Prof. Marcel Thum, Dresden University of Technology
 Madhinee Valeyathepillay, University of Munich
 Dr. Michael Weber, Dresden University of Technology
 Dr. Sebastian Wichert, University of Munich
 Prof. Ludger Wößmann, University of Zurich and University of Munich

Dr. Klaus Wohlrabe, University of Munich

Dr. Larissa Zierow, University of Munich

The ifo Institute was host to 54 visiting researchers from a variety of countries. 56 students in Munich and in Dresden were able to gather initial experience in empirical economic research.

Personnel, Finances and Organisational Bodies

Personnel Development

Following the changes in the Executive Board positions in 2016 and 2017, the year 2018 was characterised by continuity in management. In 2019, however, Gabriel Felbermayr, Director of the ifo Center for International Economics, will leave the Institute and become President of the Institute for the World Economy in Kiel. The procedure for appointing a successor is already under way. The appointment of a new professor is intended to strengthen research and teaching on the economic causes and consequences of globalisation. A joint appointment with Ludwig Maximilian University of Munich (LMU) is expected for the winter semester 2019/2020.

In the administrative area, the beginning of 2018 saw Angela Wagner – previously a consultant for personnel and law – appointed head of the “Human Resources and Law” department. Until then, this area had been managed directly by the Administrative Board under the name “Human Resources”. This measure is intended to strengthen the area of human resources and intensify the promotion of junior economists. At the same time, it takes into account the increasing importance of legal issues. It was also decided to strengthen the “Press, Publications, Conferences” (PRK) area and give it its own department head. This role is assumed by Dr. Cornelia Geißler, who joined the Institute in January 2019. At the same time, the PRK department was renamed “Communications”.

In 2018, two ifo staff received offers for professorships, underscoring the Institute’s research strength. Dr. Erdal Yalcin, senior research associate at the ifo Center for International Economics, has accepted an appointment at the University of Konstanz. Prof. Gabriel Felbermayr, Director of the ifo Center for International Economics, will be taking over the presidency of the Institute for the World Economy in Kiel and at the same time taking up an appointment to Kiel University. In August 2018, Dr. Natalia Danzer, research professor at the ifo Center for Labour and Demographic Economics, took up an appointment to Freie Universität Berlin that she received in 2017.

TRENDS IN EMPLOYEE NUMBERS

As of 31 December 2018, the number of staff at the Institute fell by eight (–3.6%) to 212. The number of scientific staff remained constant. However, the number of doctoral students decreased by eight, the number of specialists increased by one, and the number of tech-

nical staff/assistants remained unchanged. Specialists are academically trained staff who are appointed to key positions at the interface between research and service. The number of non-scientific staff decreased by one person. The number of trainees did not change compared to the previous year.

The fall in the number of part-time staff, by 13 to 95 (–12%), was greater than the overall fall in staff numbers. This mainly affected the scientific field: eight doctoral students, four scientific staff, and two technical staff/assistants in research. However, the number of part-time specialists increased by two. The number of non-scientific staff decreased by one person.

Doctoral students and scientific staff (postdocs) employed by the ifo Institute are always given limited duration contracts on the basis of the Academic Fixed-Term Contract Law. Only under special circumstances, which are defined in the ifo Institute’s career guidelines, can the time limits of researcher contracts be removed. In 2018, the time limit was lifted from three such contracts. Two of these contract changes served to ensure continuity in the management of the Dresden Branch.

All in all, the number of fixed-term contracts fell by nine to 89, which means they now make up 42% of the total workforce. In general, fixed-term contracts are mainly found in the areas of research and service. In the area of infrastructure, they apply to staff that have been hired to temporarily replace employees on parental leave.

As the total number of employees fell, the number of women also fell by a total of five (–4.1%). The proportion of women in the total workforce thus fell slightly to 54.7% (2017: 55%). While two women joined as scientific staff, six of the eight doctoral students who left the Institute were women. The number of female technical staff and assistants remained constant; two women joined as specialists. Having exceeded the 50% mark for the first time last year, when 51.7% of doctoral students were women, this figure fell back to 48%. This means that the Executive Board’s goal of achieving a balanced gender ratio among doctoral students has almost been reached. In addition, staff on parental leave or other leave are not included in the statistics. Four female doctoral students are currently on parental leave. If they were included in the calculation, the proportion of women would be 51.9%. A high propor-

A high proportion of female doctoral students

tion of female doctoral students increases the chances of employing women who have successfully completed their doctorates on the research staff, thus further strengthening the share of female postdocs. The share of women among scientific staff also increased in 2018: from 21% in 2017 to 24.6%. If the staff on leave (two women and two men) were also included here, the ratio would be 26.2%. The proportion of women among specialists rose from 61.9% to 68.2%. Among non-scientific staff, the number of women fell by three. This reduced the very high proportion of women from 72.1% to 68.3%.

The Institute's personnel policy goals include gradually increasing the share of research associates with doctorates in the total number of scientific staff to 100%. In the year under review, the share of research associates with a doctorate remained constant at 86%. If doctoral students are included in the figure, a total of 92.5% of scientific staff either held a doctorate or were working on their doctorates as of 31 December 2018 (previous year: 93%). The share of professors and researchers with habilitation degrees decreased from 29.8% in the previous year to 28.1% in 2018.

ifo's international orientation is also reflected in the fact that a significant share of scientific staff are either non-German nationals or Germans who have previously held positions abroad or who completed their studies abroad and returned to Germany to work at the Institute. As of 31 December 2018, their number fell by three to 29. Four heads of ifo research centers are foreign nationals (3) or have held positions in foreign universities before being appointed by the ifo Institute (1). As in the previous year, there were ten non-German nationals and three "returnees" among the scientific staff (2017: 4). Eight doctoral students are non-German nationals (2017: 11) and another eight (2017: 7) are German nationals who studied abroad before being appointed by the ifo Institute. As of 31 December 2018, 27.1% of scientific staff were non-German nationals or Germans who had worked at a foreign university or who had completed their studies abroad (2017: 27.8%) prior to joining ifo.

Creating a productive environment for top researchers

Number of Staff at Year-End 2018 and 2017

	Total staff		Women	
	2018	2017	2018	2017
Research and service				
Scientific staff	57	57	14	12
Doctoral students*	50	58	24	30
Specialists	22	21	15	13
Technical staff/assistants	21	21	20	20
Infrastructure				
Non-scientific staff	60	61	41	44
of which staff with management responsibilities**	15	15	10	11
Trainees	2	2	2	2
Total	212	220	116	121
	Part-time workers		Limited duration contracts	
	2018	2017	2018	2017
Research and service				
Scientific staff	10	14	33	33
Doctoral students*	44	52	50	58
Specialists	8	6	1	1
Technical staff/assistants	11	13	0	0
Infrastructure				
Non-scientific staff	22	23	3	4
of which staff with management responsibilities**	5	4	1	2
Trainees	0	0	2	2
Total	95	108	89	98
	Post-docs/habilitations, professors		of which women	
	2018	2017	2018	2017
Scientific staff	49/16	49/17	9/1	9/1

*Without guest doctoral students. – **Non-scientific staff compensated according to TV-L E13 and upwards.

FURTHER EDUCATION FOR RESEARCHERS

The ifo Institute endeavours to be a very attractive employer for policy-oriented research economists. In the race to attract outstanding researchers, providing the ideal conditions for research excellence is essential. Creating a productive environment for top researchers is a comprehensive strategic task. This involves, for example, close cooperation with universities, which is a precondition for the joint appointment of ifo research center heads as mentioned earlier, intensive use of the CESifo Research Network, international orientation and also the recognition of special achievements through bonuses. The Institute offers ongoing support in developing the scientific profile of the researchers it employs at all levels, which includes networking with international researchers and promoting a culture of discussion at a very high scientific level within the Institute. The principles of the strate-

gy for scientific and continued professional qualification at the ifo Institute are stipulated in an agreement with the Works Council.

To highlight the importance of excellent framework conditions for attracting researchers from Germany and abroad and supporting their further qualification, in 2016 the ifo Institute signed up to the “European Charter for Researchers” passed by the European Commission, which is linked to the “Code of Conduct for the Recruitment of Researchers”. The personnel policy and organisational conditions for the activities of researchers at the ifo Institute are continuously being developed in line with the targets set out in the “European Charter for Researchers”.

The promotion of junior economists – especially the training of doctoral students – is particularly important. The ifo doctoral programme serves the general promotion of young researchers in the field of empirical economic research. This training lays the foundations both for an academic career and for a role in business or public administration. Only a small percentage of doctoral students have the opportunity to continue their professional career at the ifo Institute. The Executive Board continued to offer strong support to doctoral candidates completing their studies at ifo, helping them in planning their next career move. In the year under review, the ifo Executive Board was again able to provide successful assistance in this respect.

The very high level of graduate training offered by the ifo Institute is reflected in the significant volume of peer-reviewed scientific publications that ifo doctoral students produce year after year. A series of DFG projects, successful bids in the competitive process of the Leibniz Association (SAW projects) and projects financed by private foundations (including Deutsche Telekom Foundation and Thyssen Foundation) is what makes it financially possible for the ifo Institute to employ a large number of doctoral students. In 2019, the Friends of the ifo Institute will award a Roland Berger doctoral fellowship for three years in honour of Prof. Dr. h.c. Roland Berger, Chairman of the Executive Board of the Friends of the ifo Institute. Doctoral students receive support not only from their respective department heads and postdocs, but also from the “doctoral-student officers” with cross-departmental responsibilities. Two postdocs, both of whom themselves completed ifo’s doctoral students programme,

once again performed this task with great commitment in 2018. Dr. Marc Piopiunik has held this office for many years. In 2018, Dr. Timo Hener stepped down from this role and was succeeded by Dr. Katharina Werner immediately after completing her doctorate.

Integrating doctoral students into applied research and into work on policy-oriented projects strengthens the empirical side of their economics education. As a rule, they complete their doctorates at the LMU’s Faculty of Economics, become members of the Munich Graduate School of Economics and also attend graduate courses there. In addition to many other interested members of ifo staff, its doctoral students all attend the Lunchtime Seminars run by the Center for Economic Studies and the ifo Institute. The regular research seminars held within each department also play an important role for doctoral students.

The joint appointment of all departmental heads as professors at the LMU has made it possible for almost all ifo doctoral students’ work to be supervised by their department heads. The situation is similar at the Dresden Branch: its Director, Marcel Thum, holds a chair at the Technical University of Dresden (TUD) and his deputy, Joachim Ragnitz, holds an honorary professorship there.

Supported by department heads and experienced postdocs, the doctoral students are introduced early on to presenting research findings at international forums. Presentations at high-level economic conferences with selection procedures prepare the young economists at an early stage of their career to prepare to publish articles in internationally renowned refereed journals. In the year under review, ifo researchers gave 246 presentations at international conferences. The further education of doctoral students is also supported by internal training seminars, professional editing of English-language papers and participation in external summer schools and workshops. Of course, ifo also offer individual further training measures. Nine male ifo researchers and seven female researchers were working on their habilitation in 2018.

Two years ago, in order to support doctoral students, the Institute was granted membership to the group of institutes supported by the Bernt-Rohrer Foundation. The basic aim of this foundation is to support excellent students and doctoral candidates in their study and/or academic careers. In 2017, the Foundation awarded two

Laying the foundations for academic careers and roles in business or public administration

ifo researchers gave 246 presentations at international conferences in 2018

ifo researchers often spend several months on research leave abroad

publication fellowships to doctoral students at the ifo Institute; these will support the recipients in the publication of a top scholarly publication with them as sole authors. In 2018, two fellowships abroad were awarded, which enabled two doctoral students to plan and co-finance a research stay of several months each in the US.

Another initiative of the new Executive Board is the special promotion of the group of postdocs. The more effectively they can communicate their scientific findings and contribute them to consulting and service activities, the more actively and specifically they can shape their own careers and at the same time establish and disseminate the “ifo brand”. For this reason, the Institute and the LMU are together currently establishing a postdoctoral programme (Junior Development Program) that not only provides a mentoring framework but also supports the participants with a variety of offers, e.g. in planning their own careers, developing leadership skills or communicating their research results to the public. The first workshops and fireside chats have already taken place in this programme.

Numerous researchers at the ifo Institute teach at universities with which ifo cooperates closely, which gives them the opportunity to constantly revise and expand their own expert knowledge base. In the summer semester 2018 and in the winter semester 2018/2019, a total of 87 university courses, especially with an empirical orientation, were offered by ifo staff. Additionally, all researchers at the Institute are given the opportunity to keep abreast of research developments by attending the appropriate lectures and seminars at the LMU. The weekly lunchtime seminars are also of great help in promoting the exchange of new research ideas. They serve as a forum for the discussion of current research and research findings as well as new developments in economics. Speakers and attendees are primarily from the ifo staff and the LMU. Workshops lasting several days at which ifo research teams can exchange information on current projects are also organised outside the Institute and make a significant contribution to further scientific training.

Academic prowess is developed primarily in research projects. Here, internal ifo expertise is extended in cooperation with external experts. Guest researchers at the Institute therefore play a special role. The number of guest researcher stays totalled 54 in 2018 (2017: 61). In recent years, it has also become established prac-

tice for ifo researchers to spend several months on research leave abroad. In 2018, there were a total of 17 guest stays, nine of which lasted several months and were completed at top universities in the US, Australia, Israel and Europe (Spain, Norway, Belgium). Research stays at top universities benefit the academic performance of ifo’s research departments, since the academics on leave can further deepen their academic expertise during their research stays abroad, can pave the way for new joint projects with international co-authors and, at the same, can continue to work on their ongoing projects.

The promotion of junior economists begins in the ifo Institute with the employment of interns. Their importance for the Institute should not be underestimated, since former interns often apply and are accepted for posts as doctoral students. A total of 56 interns gained their first experiences of empirical economic research at ifo in 2018 (2017: 66). Of this total, 53.6% were women (2017: 40.9%). This not only increased the proportion of women compared to the previous year, but it even exceeded the 50% mark. The Institute’s goal is to maintain an approximately 50% share of female interns.

FURTHER EDUCATION FOR NON-RESEARCHERS

The further education of staff working in the non-research areas also has a high priority for the Institute. The abovementioned agreement with the Works Council also regulates all aspects of the professional education of non-research personnel. The aim is to provide non-scientific staff with the ideal qualifications for managing their current tasks and to open up further career options.

To this end, the Personnel and Law department systematically surveys the qualification requirements of all staff members at the beginning of each year. Overall, 188 further training measures were approved in 2018, of which 125 were also conducted in that year. Most of the remaining measures are to be completed in 2019. Some training courses could not be attended due to the high number of research stays in Germany and abroad. A large share of the training measures requested are usually in the field of IT, where the focus lies on training for the specific IT requirements of individual employees. These measures were complemented by customised courses to deal with challenges encountered in individual tasks. These courses are usually integrated directly into the specific work-

Weekly lunchtime seminars promote the exchange of new research ideas

place and thus have a high degree of efficiency. The Institute's strategy includes increasing the number of in-house courses as a way of strengthening staff networking within the Institute at the same time as providing further education.

The Institute also endeavours to promote junior staff in the non-scientific area. It regularly offers an Office Communication Trainee Programme. One young trainee successfully completed this course in January 2018. Two other young women are currently undergoing training.

AWARDS

The Friends of the ifo Institute awards annual prizes to researchers at the Institute who have attracted attention thanks to their outstanding scientific achievements. A prize can be awarded only if a scientific article was published in an internationally renowned peer-refereed journal. In 2018, the decision was taken to pay particular attention to junior economists. Dr. Felix Rösel was a worthy recipient of a prize: Last year, during his doctoral studies, he managed to publish a total of five articles in peer-reviewed journals (*European Journal of Political Economy*, *Health Economics*, *Fiscal Studies*, *Economics of Transportation* and *Perspektiven der Wirtschaftspolitik*).



Clemens Fuest, Veronika Grimm, Felix Rösel, Stephan Rupprecht

The annual prize for outstanding achievement in managing third-party research projects went to the project team comprising of Prof. Ludger Wößmann, Elisabeth Grewenig, Dr. Sarah Kersten, Franziska Kugler, Philipp Lergetporer Ph.D., Laura Oestreich, Lisa Simon and Katharina Werner for their successful work on the project "The Political Economy of Educational Policy: Insights from a Public Opinion Survey", which was funded by the Leibniz Association as part of the Leibniz Competition.



Clemens Fuest, Sarah Kersten, Ludger Wößmann, Philipp Lergetporer

EQUAL OPPORTUNITIES AT THE IFO INSTITUTE

The ifo Institute has actively promoted equal opportunities for women and men for many years. In this important task, the Executive Board is supported by an Equal Opportunity Officer at its Munich location and by a women's representative at its Dresden Branch. The current equal opportunities plan, which is valid until autumn 2019, has the primary objective of gradually reducing the under-representation of women at all levels of the scientific career ladder. The working conditions and development opportunities for women are ideally designed in such a way that work at the ifo Institute is attractive to female researchers and that the share of women on the research staff is further increased. ifo's internal rules on equality are also part of the Institute's certified management system, which is annually audited by external auditors. This means that the continued certification of ifo's management system also depends on the strict observation and continuous further development of gender equality regulations.

The ifo Institute places a particular focus on qualifying female researchers for management positions in scientific institutions. ifo expressly supports applications for projects in the Leibniz tendering process that serve to promote women for leadership positions in research. This Leibniz line of funding aims particularly to increase the likelihood of the respective project/working group leader being appointed to a W2 or W3 professorial position. In the Leibniz tendering procedures of 2015 and 2016, the ifo Institute was successful with corresponding project proposals. One of the two female project leaders has since taken up an appointment at Freie Universität Berlin. The Institute also encourages

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Qualifying female researchers for management positions in scientific institutions

its female economists to apply for the Leibniz Mentoring Programme, which has consistently been judged helpful by previous participants.

Women are increasingly being appointed to ifo's various official bodies

The promotion of equal opportunities for men and women in scientific positions also involves the setting of flexible target quotas along the lines of the cascade principle of research-oriented equality standards established by the German Research Foundation (DFG). The ifo Institute has anchored such flexible target quotas for the compensation levels of senior scientific staff in its Programme Budget, which is the basis for institutional support from Germany's federal and state governments. The time frame for these target quotas extends until the year 2020.

In 2018, the share of female researchers increased again, as mentioned above. Dr. Christa Hainz, an experienced researcher from the ifo Center for International Institutional Comparisons and Migration Research, is the mentor for the female doctoral students and helps ifo's Executive Board improve the general conditions for these staff members. She is their contact person and takes care of the special concerns of young female scientists, such as qualification events that have been directed exclusively at female doctoral students to date. Overall, the share of women among scientific staff, including doctoral students, fell from 36.5% to 35.5% in 2018. However, if all staff on leave were included, the proportion of women would be 38.3%.

Part-time positions and teleworking make work more family-friendly

The availability of part-time positions remains an important element of the family-friendly organisation of work at the ifo Institute. The proportion of women among part-time staff remained constant at 69.4% in the year under review. If doctoral students are excluded from this calculation, the proportion of women fell slightly to 86.3% compared to the previous year (87.5%). The ifo Institute will continue to offer and promote part-time employment to advance and achieve a positive work-life balance.

Other family-friendly aspects of work organisation at the ifo Institute include the option of teleworking, the framework conditions are laid out in an agreement with the Works Council, as well as the option for staff on parental leave to continue to use the further training opportunities offered by the Institute during their leave of absence. To enable parents to resume their careers swiftly, the ifo Institute signed a cooperation agree-

ment in 2013 with a municipal operator of day-care centers for children of working parents. The Institute finances the prospective entitlement to three child-care places offered to its staff. At present, three ifo employees are taking advantage of day-care places offered at a reasonable municipally regulated price.

Another contribution to equal opportunity at the Institute is that women are increasingly being appointed to ifo's various official bodies. In the Administrative Board, the Institute has little influence over this as the majority of seats are linked to an external function. Currently, 40% of Administrative Board members are women. Of the twelve members of the Scientific Advisory Council, four are female academics. One of the eight members of the ifo User Advisory Council is female and 15 of the 73 members of the ifo Institute Board of Trustees are women.

The Institute's cooperation with the Dual Career Offices of the two major Munich universities is important for both women and men. This service is becoming increasingly significant in terms of attracting renowned researchers to the Institute. The cooperation with both universities has already met with great success.

Financial Development

The ifo Institute is a non-profit institution that aims to serve academia and research. The ifo Institute's objective is to provide research and services as public goods, and not to generate financial profits. This also applies to contract research conducted on behalf of state or private institutions. ifo's findings are also made public, which strengthens the foundations of all of the Institute's work. The Institute's financial strategy aims to achieve a balanced long-term cost and earnings structure that permits a large service and research output that benefits the general public. Sufficient financial reserves help offset income fluctuations and allow a flexible response to special demands.

SUMMARY OF KEY DEVELOPMENTS

The Institute's financial statement for 2018 shows a surplus of 126,000 euros. This was channelled into reserves, increasing the Institute's assets to a total of 2.499 million euros as of 31 December 2018.

In 2018, the ifo Institute received public funds totalling 10.756 million euros as part of joint research funding based on Art. 91b Basic Law (German constitution). Of this amount, 10.441 million euros was used for current operations and 315,000 euros was used for investment. A cash balance of 850,000 euros, which was accumulated in 2017 and carried over into 2018, also remained at the disposal of the ifo Institute. This cash balance was spent in the first quarter of 2018. The ifo Institute therefore had a total of 11.606 million euros at its disposal in 2018 from joint research funding and the balance figure related to the use and appropriation of a cash balance.

ASSETS AND FINANCES

The balance sheet total rose by 658,000 euros (+7.5%) versus last year to 9.465 million euros. On the asset side, this was due to the fact that within the floating assets, inventory rose by 224,000 euros and liquid funds rose by 687,000 euros, while short-term receivables and accruals and deferred income fell by 245,000 euros. Fixed assets also fell by 7,000 euros.

On the liabilities side, an increase was seen in the Institute's assets (126,000 euros), down-payments received (552,000 euros) and other accruals (10,000 euros). By contrast, there were decreases in liabilities vis-à-vis banks (-1,000 euros) and other liabilities (-29,000 euros).

From the annual surplus of 126,000 euros cited above, 115,000 euros was channelled off into research reserves, bringing the latter up to a total of 1.671 million euros by 31 December 2018. Voluntary payments beyond membership fees, which are managed by the ifo Institute's Administrative Council, amounted to 11,000 euros. This sum was added, in accordance with the ifo statutes (Art. 4. Sec. 2), to the earmarked reserves, which totalled 828,000 euros. This increased the Institute's assets to a total of 2.499 million euros by 31 December 2018.

Liquid funds were available at all times throughout 2018. The stock of liquid assets rose by 688,000 euros versus the previous year to 7.148 million euros. Cash flow from current operations was positive (1.107 million euros), while cash flow from investment activity (-419,000 euros) was negative in 2018.

Balance Sheet of the ifo Institute for 2018 in EUR Thousands (abridged version)

	31.12.2018	31.12.2017
Assets		
<i>Fixed assets</i>	81	89
<i>Current assets</i>		
Inventory	1,532	1,308
Receivables and accruals	704	949
Liquid funds	7,148	6,461
Total assets	9,465	8,807
Liabilities		
<i>Net worth</i>		
Earmarked funds	828	816
withdrawals/ additions	0 11	0 14
Research reserves	1,671	1,557
withdrawals/ additions	0 115	0 165
<i>Short-term debt</i>		
Reserves	3,879	3,869
Liabilities vis-à-vis banks	0	1
Down payments received	2,665	2,113
Other liabilities	422	451
Total liabilities	9,465	8,807

PROFIT AND LOSS STATEMENT

Operating income grew by 278,000 euros in 2018 to reach a total of 19.127 million euros. Only a small part of the increase resulted from public grants (80,000 euros), which would in fact have decreased due to the discontinuation of special funding, had it not been for the cash balance from the previous year.

ifo's objective is to provide research and services as public goods

Income from third-party activities, comprising earmarked subsidies, revenues from publications, database services and events, revenues from commissioned activities (contract-based research), and other revenues, as well as the corresponding changes in inventory, rose by 190,000 euros from 6.452 million euros in 2017 to 6.642 million euros in 2018.

The number of Association members fell from 325 in 2017 to 314 as of 31 December 2018. As a result, income from membership fees (obligatory and voluntary) decreased by 10,000 euros from 139,000 euros to 129,000 euros.

The increase in third-party funding corresponds to an increase in the cost of materials and purchased services associated with third-party funding activities of 136,000 euros compared with the previous year.

Personnel expenses rose by 613,000 euros (5%) to 13.980 million euros. The main reasons for this are, on the one hand, the increase in collectively agreed remuneration (2.35%) and, on the other hand, the introduction of a new level 6 in pay groups 9 to 15. The number of staff fell by three versus the previous year to 224 on the reporting date (2017: 227).

Regular depreciation (7,000 euros) refers to fixed assets financed out of the Institute's own funds, while unplanned depreciation (198,000 euros) corresponds to the investment subsidies for fixed assets received in the reporting year from public research funding bodies. Other operating expenses (balanced by other operating income) fell by 212,000 euros to 3.045 million euros.

This means that income exceeded costs by 63,000 euros (income from current operations). Owing to negative interest rates, financial profit was negative at -13,000 euros. In addition, the Institute posted 78,000 euros in positive neutral and out-of-period results due to a change in provisions from previous years. The Institute also had to pay taxes of 2,000 euros, giving it an annual profit of 126,000 euros.

Profit and Loss Statement of the ifo Institute for 2018 in EUR Thousands (abridged version)

	31.12.2018	31.12.2017
Public grants	12,356	12,258
Earmarked financial support	2,717	2,315
Obligatory membership fees	118	125
Voluntary membership fees	11	14
Income from publications, database services, conferences	380	335
Income from commissioned activities	3,203	3,242
Other revenues	118	117
Change in stocks of non-invoiced services	224	443
Operating income	19,127	18,849
Expenditure for material and purchased services	1,834	1,698
Personnel expenditure	13,980	13,367
Regular depreciation	7	25
Unplanned depreciation	198	255
Other operating expenses minus income	3,045	3,257
Operating expenses	19,064	18,602
Operating profit	63	247
Financial profit	-13	-18
Taxes on income and profit	-2	-45
Neutral income and income unrelated to the accounting period	78	-5
Annual profit	126	179
Withdrawals from research reserves	0	0
Additions to research reserves	115	165
Withdrawals from statutory reserves	0	0
Additions to statutory reserves	11	14
Profit brought forward	0	0

For the output that the ifo Institute produces in research, policy advice and services as an institution of the Leibniz Association, it receives institutional support from the German federal government and the federal states as part of joint research funding according to Art. 91b Basic Law. Institutional support from the Bavarian Ministry for Economic Affairs, Regional Development and Energy as well as from the German Federal Ministry of Economic Affairs and Energy amounted to 10.756 million euros. ifo also had reserves of 850,000 euros from 2017. Of the overall sum of 11.606 million euros of available funds, 10.872 million euros was used for day-to-day operations and 734,000 euros was spent on investments and IT investment services as well as first-year licences for new software.

In addition to this basic public support, the Dresden Branch receives separate institutional support from the Free State of Saxony according to Art. 91b Basic Law. Institutional support of the Dresden Branch by the

ifo receives institutional support from the German federal government and the federal states

Saxon Ministry of Finance amounted to 750,000 euros (of the 750,000 euros in funding originally granted, 232 euros was not used).

The Institute's financial statements were audited by KPMG AG Wirtschaftsprüfungsgesellschaft and received unreserved certification.

Executive Board

Prof. Dr. Dr. h.c. Clemens Fuest (President)
 Dr. Stephanie Dittmer

ifo Centers for

Macroeconomics and Surveys Prof. Dr. Andreas Peichl <ul style="list-style-type: none"> ■ Economic policy analyses ■ Forecasting ■ Inequality and redistribution ■ Survey data and methodological expertise ■ Business cycle indicators and macroeconomic forecasts 	Public Finance and Political Economy Prof. Dr. Niklas Potrafke <ul style="list-style-type: none"> ■ Fiscal federalism and local finances ■ Evaluation of fiscal and taxation policy ■ Government debt in Germany and Europe ■ Political economy 	Labour and Demographic Economics Prof. Helmut Rainer, Ph.D. <ul style="list-style-type: none"> ■ Labour economics: time allocation, labour supply, search and matching, migration and integration ■ Demographic economics: marriage, fertility, family structure, domestic abuse, health 	The Economics of Education Prof. Dr. Ludger Woßmann <ul style="list-style-type: none"> ■ Education and individual outcomes: labour markets and lifecycles ■ Education and long-term development: economic growth and prosperity ■ Determinants of education: culture, resources and institutions ■ Governance of education: efficiency and equity
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Industrial Organisation and New Technologies Prof. Dr. Oliver Falck <ul style="list-style-type: none"> ■ Industrial organisation and industry-level analysis ■ New technologies ■ Collection of firm-level and industry-level data ■ LMU-ifo Economics and Business Data Center (EBDC) 	Energy, Climate and Resources Prof. Dr. Karen Pittel <ul style="list-style-type: none"> ■ Climate and resources ■ Environment ■ Energy Research Director Prof. Dr. Christian Traeger	International Economics N. N. <ul style="list-style-type: none"> ■ Globalisation and labour markets ■ Trade costs and trade policy ■ Trade and environmental policy 	International Institutional Comparisons and Migration Research Prof. Panu Poutvaara, Ph.D. <ul style="list-style-type: none"> ■ Research on institutions and international comparisons ■ Research on migration and coordination of the Center of Excellence for Migration and Integration Research ■ Database for Institutional Comparisons In Europe (DICE) ■ Publication of the <i>ifo DICE Report</i> and the <i>CESifo Forum</i>
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Executive Departments

Executive Support Staff Personal Assistants: Susanne Crefeld Franca Fogli-Götz Advisors: Dr. Wolfgang Auer Barbara Hebele Anja Hülsewig	Quality Management Przemyslaw Brandt Stefan Sauer Julia Schricker Controlling/Equal Opportunity AGG Dr. Dorothea Pohlmann	Research Group Taxation and Fiscal Policy Leader: Prof. Dr. Dr. h.c. Clemens Fuest Data Protection Dr. Thomas Wirth (extern)	Dresden Branch Prof. Dr. Marcel Thum (Director) Prof. Dr. Joachim Ragnitz (Managing Director)
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Central Departments

Human Resources and Law Angela Wagner	Finances and Centralised Services Sabine Dehof	Information Technology Christian Pitsch	Library	Communications Dr. Cornelia Geißler
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Ombudsman

Prof. Dr. Heinrich Ursprung (extern)