

2019

Annual Report

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ifo INSTITUTE

Leibniz Institute for Economic Research
at the University of Munich

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The ifo Institute 2019

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 = **I**nformation and **F**orschung (research). Its legal form is that of a registered, nonprofit 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 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 young researchers, 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, provide 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 for 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. Digitalization of the economy
5. European integration, globalization, 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 Department 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 nonuniversity 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 – Public Finance and Political Economy, Labor and Demographic Economics, The Economics of Education, Industrial Organization and New Technologies, Energy, Climate, and Resources, International Economics, International Institutional Comparisons and Migration Research, and Macroeconomics and Surveys – cover research topics that are also highly relevant for policy advice. The ifo Dresden

Enriching the public debate

Branch, founded 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 program and are also members of the Munich Graduate School of Economics (MGSE) at LMU. ifo's doctoral program 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 underrepresentation of women among its researchers by placing a particular emphasis on supporting young female academics.

Politics and the general public benefit from the close link between the ifo Institute and the university, 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.

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 recognized 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 and the upgrade of technical and content aspects in 2019, the Database for Institutional Comparisons in Europe (DICE) 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 organizes a number of international conferences at the ifo Institute, and has become the second largest economic 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 characterized by its cooperation with universities and renowned researchers in Germany and abroad. Its collaboration with LMU occupies a special place in ifo's work. ifo and 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 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

**ifo Business
Climate Index: An
internationally
recognised indicator**

work. 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 (Centre for International Research on Economic Tendency Surveys), the EENEE (European Expert Network of Educational Economists), and EURO-CONSTRUCT.

The ifo Institute cooperates closely with external economists and other established experts to assure the quality of its research. This particularly applies to its 53 research professors and nine research affiliates, research associates, and senior research associates (as of December 31, 2019) 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

For the ifo Institute, the year 2019 was marked by two notable events. First, the evaluation of the Institute by the Senate of the Leibniz Association took place. The group of experts visited the ifo Institute on July 1 and 2. Their impression of the ifo Institute was a positive one and they endorsed the path ifo has taken. The Executive Board is happy to take on the advice and recommendations received and will incorporate them into the further strategy process. More detailed information on the assessment is provided at the end of this chapter.

Second, the Institute celebrated its 70th anniversary in 2019. A whole host of festivities took place around the theme “70th Anniversary of the ifo Institute – 70th Anniversary of the Social Market Economy.” The highlight was the ifo Annual Meeting on June 6, which took place in the Great Hall of the University of Munich (LMU). At the event, the keynote was given by Annetegret Kramp-Karrenbauer, leader of Germany’s Christian Democratic Union (CDU), addressing the question of “70th Anniversary of the Social Market Economy – What Will Be the Future of Our Economic Order?” Further details about this event are given in the “Communications” chapter.

While there were no personnel changes on the ifo Scientific Advisory Council in 2019, there is some news regarding other **ifo organizational bodies**. Dr. Peter-Alexander Wacker was confirmed as Chairperson of the ifo Administrative Council and of the Board of Trustees for a further three years. Following the departure of Milagros Caiña-Andree, BMW AG, two new people were appointed to succeed her: Dr. Annette Niederfranke, Director of the International Labour Organization (ILO) Office for Germany, and Jakob von Weizsäcker, Head of Department 1, Fiscal and Economic Policy Issues at the German Ministry of Finance. There were also further changes and extensions to terms of office on the Board of Trustees, which now has 71 members. Dr. Ursula Weidenfeld joined the User Advisory Council as a freelance journalist. Overviews of all the official bodies can be found at www.ifo.de/gremien.

Since March 2019, Prof. **Gabriel Felbermayr** – former Director of the ifo Center for International Economics – has been President of the Institute for the World Economy (IfW) in Kiel. The ifo Institute regrets his departure, but also sees this hon-

orable appointment as a success for the Institute. To succeed him, the ifo Institute together with LMU has announced a professorship for economics that will be known as the Economics of Globalization. The appointment process is in the final stages; a replacement is expected to be announced in the first half of 2020.

Below are the key developments of 2019 in research, the support of junior economists, policy advice, and scientific service.

RESEARCH AND THE SUPPORT OF JUNIOR ECONOMISTS

Publications in international journals that are peer-reviewed with an external referee process are a key indicator of scientific achievement. The year 2019 was another outstanding year in terms of the ifo research staff’s output. A total of 68 papers submitted by ifo economists to internationally recognized refereed journals were accepted for publication; 32 of these were published in high-ranking category A+ to C journals. In addition, ifo staff presented their research results by delivering 180 papers at international conferences with a referee system.

Table 1:
Publications in Peer-Reviewed Journals, 2012–2018

	2012	2013	2014	2015	2016	2017	2018	2019
Articles in peer-reviewed journals	68	63	57	56	58	74	60	68
of which in categories A+ to B; from 2017 A+ to C	31	32	22	28	22	29	22	32

The following researchers successfully published articles in top academic journals in the A+/A categories in 2019:

- Christian Grimme (with Rüdiger Bachmann, Benjamin Born, and Steffen Elstner), “Time-Varying Business Volatility and the Price Setting of Firms,” *Journal of Monetary Economics* 101, 82–99.
- Marc Piopiunik (with Eric A. Hanushek and Simon Wiederhold), “The Value of Smarter Teachers: International Evidence on Teacher Cognitive Skills and Student Performance,” *Journal of Human Resources* 54(4), 857–899.
- Justin Tumlinson (with John Morgan), “Corporate Provision of Public Goods,” *Management Science* 65(10), 4489–4504.

70 years of social
market economy,
70 years of ifo

- Panu Poutvaara (with George J. Borjas and Ilpo Kauppinen), “Self-Selection of Emigrants: Theory and Evidence on Stochastic Dominance in Observable and Unobservable Characteristics,” *The Economic Journal* 129 (617), 143–171.
- Feodora Teti (with Gabriel Felbermayr and Erdal Yalcin), “Rules of Origin and the Profitability of Trade Deflection,” *Journal of International Economics* 121.
- Yoto V. Yotov (with Scott Baier and Thomas Zylkin), “On the Widely Differing Effects of Free Trade Agreements: Lessons from Twenty Articles Years of Trade Integration,” *Journal of International Economics* 116, 206–226.
- Andrea Ariu (with Holger Breinlich, Gregory Corcos, and Giordano Mion), “The Interconnections between Services and Goods Trade at the Firm-Level,” *Journal of International Economics* 116, 173–188.

Two books – *Disrupted Economic Relationships* and *The WTO and Economic Development* – were published in 2019 in the **CESifo Seminar Series** published by MIT Press. This series publishes the research results from joint projects of CESifo researchers and designated external economists. 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 2019: ifo Institute (3rd), CESifo (5th), and the LMU (6th). 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.

In the corresponding **RePEc ranking** of scientific citations by individual researchers, ifo researchers ranked highly. Ludger Wößmann is fifth among German economists, while ifo President Clemens Fuest is 33rd. In addition, four other ifo department heads placed among the top 100 economists (see Table 3) – Niklas Potrafke (41st), Andreas Peichl (48th), Panu Poutvaara (79th), and Oliver Falck (95th). In the Handelsblatt Ranking 2019, Niklas Potrafke took third place in the category “Top economists – aged under 40 years in German-speaking countries”.

Table 2:

Economics Research Institutes and Economics Schools in the RePEc ranking, December 2019

Ranking	Institution	Points
1	ECB, Frankfurt/Main	1.57
2	IZA, Bonn	1.70
3	ifo Institute, Munich	4.37
4	DIW, Berlin	4.52
5	CESifo, Munich	4.80
6	LMU, Munich	6.26
7	Deutsche Bundesbank	7.11
8	University of Frankfurt/Main	9.00
9	University of Mannheim	9.13
10	University of Bonn	10.42

Table 3:

Individual Researchers in the RePEc Ranking, December 2019, Germany

Ranking	Person	Points
5	Ludger Wößmann	7.60
33	Clemens Fuest	37.63
41	Niklas Potrafke	44.10
48	Andreas Peichl	52.46
79	Panu Poutvaara	93.23
95	Oliver Falck	110.58
243	Helmut Rainer	253.12
881	Karen Pittel	901.48

Six of the top 100 most cited economists in Germany

The ifo Institute’s European position is also strong. This is demonstrated by the fact that in the RePEc ranking at the end of the year, it ranked 22nd in Europe and 48th worldwide among all economic research institutions. ifo economists are also prominently represented in the individual researcher rankings. For example, Ludger Wößmann is ranked 57th and Clemens Fuest 225th in a European comparison.

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 2019 has a double effect for the ifo Institute: on the one hand, it increases the scope for 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 three examples:

Meaningful
research on key
social issues

Since the Federal Republic of Germany was formed, the Länder have reformed many important aspects of their school systems. Examples include pupils being graded in the early years of primary school, grades for behavior (*Kopfnote*), the binding nature of test results that determine pupils' choice of secondary school (*Übertrittsempfehlung*), compulsory religious studies, and compulsory MINT subjects as part of the Abitur. In the “Efficiency and Equality in Education” project funded by the Leibniz Association, researchers from the ifo Center for the Economics of Education are investigating how these reforms have affected the professional skills and socio-emotional development of the students concerned and their future path. The project is being carried out in collaboration with the Berlin Social Science Center (WZB).

Right-wing populist movements are on the rise in Western democracies. Populists are gaining support in particular from voters in once booming industrial centers that are now undergoing structural change. The consequences of rapid and far-reaching change could be mitigated through local networks, relationships, and identity (social capital), which create a sense of solidarity and deprive populists of the springboard they require. It is also conceivable, however, that close-knit networks and associations, such as sports clubs, can be used to channel and fuel populist tendencies. Entitled “Local Social Capital and the Rise of Right-Wing Populism,” a project carried out by the ifo Institute's Dresden Branch and funded by Deutsche Forschungsgemeinschaft (DFG), sets out to examine the relationship between social capital and right-wing populism in depth.

Domestic violence is the most common form of violence against women and is the main cause of female homicides worldwide. A project funded by the Leibniz Association entitled “The Economics of Violence against Women” addresses the causes of violence against women, the question of how wide-reaching improvements to the economic and social participation of women over the last century has impacted the situation, and what measures can help mitigate or prevent such violence. The project is being carried out at the ifo Center for Labor and Demographic Economics.

In connection with research, the **support of junior economists** is a core task of the ifo Institute. As of De-

ember 31, 2019, the ifo Institute employed 44 doctoral students, 22 of whom were women. A total of 14 doctoral students completed their doctorates in 2019: Annika Bergbauer, Katharina Candel Haug, Manuela Krause, Tobias Lohse, Waldemar Marz, Andreas Mazat, Mathias Mier, Magnus Reif, Alexander Sandkamp, Maximilian Schwefer, Lisa Simon, Thomas Steinwachs, Christoph Weissbart, and Christian Wittneben.

The **Junior Development Program (JDP)**, jointly developed by the ifo Institute and the LMU's Department 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 program combines structured mentoring with a multi-level series of development workshops, seminars, and networking activities. In addition, funds are available for research projects.

The ifo Institute contributes to this program both through mentoring and by organizing workshops and seminars. All postdocs at the ifo Institute can apply to become a member of the JDP and take part in the offer. A two-day retreat (Junior Faculty Retreat) was held in 2019. In addition, various fireside chats were organized on topics such as appointment procedures or the procurement of third-party funding, in which postdocs from LMU and ifo were able to exchange ideas with ifo alumni and ifo professors.

Method-oriented in-house training courses held at the ifo Institute are offered for junior researchers and have been expanded in recent years. Courses of this nature held in 2019 included one on **machine learning** and one on the programming language **Python**.

In addition, CESifo, together with a number of partners, held the **3rd Doctoral Workshop on the Economics of Digitization**, which took place in Louvain-la-Neuve (Belgium) in May. The idea behind this format is to bring together doctoral students from all over the world who are researching the economics of digitization with a theoretical and empirical focus. Besides promoting scientific exchange, the event also serves to facilitate networking among the junior researchers.

The **Roland Berger Doctoral Scholarship**, which is sponsored by the Friends of the ifo Institute, was awarded in 2019. The recipient, Jean-Victor Alipour,

will focus on the effects of digitization on the labor market in his doctoral studies at the ifo Center for Industrial Organization and New Technologies.

ifo economists also help to develop junior economists through courses. In the year under review, ifo economists held 67 teaching positions and supervised 84 Bachelor's and Master's theses, 69 dissertations, and 18 habilitations.

The Institute's scientific performance is also influenced by the close **involvement of external researchers**. In 2019, Kaspar Wüthrich (University of California, San Diego), Michael Weber (University of Chicago), and Gabriel Felbermayr (Kiel Institute for the World Economy) were recruited as new research professors, with the result that a total of 53 external economists were associated with the ifo Institute as research professors on December 31, 2019. In addition, nine (senior) research associates work together with the Institute.

A particularly important element of international networking is the promotion of research stays abroad for ifo economists, especially at top universities outside Germany. A total of 30 research stays took place at Harvard University, Stanford University, Princeton University, the London School of Economics & Political Science, and the World Bank, among others.

Each year, **CESifo** organizes numerous **conferences, workshops, and seminars** that are ideal vehicles for promoting the exchange of ideas between economists and helping to expand their networks. Particularly noteworthy are the Area Conferences and the CESifo Venice Summer Institute. In total, CESifo organized 23 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: "The Future of Europe: Structural Reforms, Growth, and Globalization"; "Poverty, Inequality, and their Associations with Disasters and Climate Change"; "Gender in the Developed and Developing World"; "Economics of the Gig Economy;" and "Taxation in the Digital Economy: Theory and Evidence." 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 2019, the network had grown to 1,653 members from 43 countries.

In 2019, several ifo researchers received awards for their outstanding research achievements, two of which are mentioned here. In May 2019, the Hanns Martin Schleyer Foundation awarded Clemens Fuest the 2018 **Hanns Martin Schleyer Prize** for his "services to strengthening and promoting the foundations of a liberal community."

Sebastian Wichert and his coauthors received the 2019 **Science Award from the German Society for Health Economics** for the article entitled "Is It Good to Be Too Light? Consequences of Birth Weight Thresholds in Hospital Reimbursement Systems," which was published in the *Journal of Health Economics*.

In addition, several other prizes for achievements in research and managing contract studies were awarded as part of the 70th Annual Meeting. More information is provided in the section on personnel development.

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 policymakers and, in turn, derives its research topics from the policy debate. In 2019, 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. Some of the topics these addressed in 2019 were: "The Debt Brake Is the Target of Criticism – But It Guarantees Sustainable Fiscal Policy"; "A Populist versus a Market-Based Economic Policy"; and "Germany's New Industrial Policy."

The **European Economic Advisory Group at CESifo (EEAG)**, a CESifo-backed council of economic experts on the assessment of economic developments

Advising on policy and informing the debate

in Europe, published an annual report in February 2019 entitled “A Fragmenting Europe in a Changing World,” which considers the challenges for the European Union. The focus is on its fragmentation and tendencies toward disintegration that can arise in multinational, multilingual, and multiethnic integrated economic entities. To understand why this is the case and what the consequences are, the report takes an inward look at individual EU member states and an outward look at where major economic and geopolitical challenges have shaken many European countries.

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 program comprised 24 issues of *ifo Schnelldienst*, 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*. Twelve *ifo research reports*, two *ifo Dresden studies*, and seven *ifo contributions to economic research* were published as monographs, and 32 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, 598 issues have appeared in the *CESifo Working Papers* series supervised by CESifo, which publishes essays by members of the *CESifo Research Network*. Rounding off the list of publications are 19 issues of the series of *EconPol Working Papers*, plus ten issues of *EconPol Policy Reports*, and nine issues of the *EconPol Policy Briefs*.

In 2019, **events** organized by the ifo Institute continued to mark high points in the economic policy debate. The **ifo Annual Meeting** – which, as in previous years, was held in cooperation with LMU in the university’s Great Hall – was dedicated to the 70th anniversary of the ifo Institute. Addressing the topic of the “70th Anniversary of the Social Market Economy – What Will Be the Future of Our Economic Order?,” Clemens Fuest, Annegret Kramp-Karrenbauer, and others presented their ideas for developing the social market economy. More information is available in the “Communications” chapter.

The 11 **Munich Seminars** organized 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 “How Do We Save the Climate and How Not to?” also took place as part of the Munich Seminars.

In March and October 2019, two further **Parliamentary Breakfasts** were held at the Bavarian Representation in Berlin. In the spring, Clemens Fuest, Marcel Thum, and Joachim Ragnitz joined the members of parliament in discussing current challenges in economic and European policy; in the fall, Karen Pittel presented the Flexcap model to further the climate policy debate, while Fuest presented the citizens’ fund concept.

The ifo **Branchen-Dialog** (ifo Industry Colloquium), a series of conferences organized in cooperation with the Chamber of Commerce and Industry for Munich and Upper Bavaria to analyze current economic developments, also continued in 2019. More information is available in the chapter on the ifo Center for Industrial Organization and New Technologies.

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 2019 are given here:

- Framework agreement on conducting economics studies (Chamber of Commerce and Industry for Munich and Upper Bavaria). Projects that came under this framework contract were:
 - Growth markets in Africa for the Bavarian economy
 - Employment effects of reforms to increase the employment of women and elderly workers
 - ICT in the Greater Munich Area, 2019
 - Incentives for increasing employment of women
 - Vehicle construction – How is the value chain changing?
 - The New Silk Road – Growth region for the Bavarian economy
- Effects of Potential Currency Conflicts on the German and European Economy (German Federal Ministry for Economic Affairs and Energy)

- Options for Reforming the Basic Security Benefit System for the Gainfully Employed (German Council of Economic Experts)
- Evaluation of Tax Concessions (German Federal Ministry of Finance)
- Report on the Preparation of an All-German Regional Funding Program (Thuringian Ministry of Economy, Science, and the Digital Society)
- Innovations for a Sustainable Land and Energy Management on the Regional Level (German Federal Ministry of Education and Research)
- Transparency – Tax Secrecy in International Comparison (Foundation for Family Businesses)
- Policy Instruments for a Crisis-Proof European Union? (Leibniz Research Alliance)

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 continued to pursue its activities in 2019. Events that deserve special mention include the EconPol Lab at the CEPS Ideas Lab 2019 event in Brussels, three lunch debates with MEPs in Brussels, plus the annual conference. With the theme of “Europe’s Competitiveness and the Rise of China,” the conference took place in Brussels in November and attracted strong media and public attention. Further information can be found in the chapter on the “ifo Center for Macroeconomics and Surveys,” which is in charge of the EconPol network.

Media coverage is an important indicator of the relevance of academic papers for politics and society. According to analyses by Media Tenor, the ifo Institute successfully defended its position as the most frequently cited institute in 2019 and even strengthened

its presence. Clemens Fuest still tops the list of economists cited in Germany’s leading media. According to Media Tenor, the ifo Institute strengthened its media presence and is also one of the economic research institutes most frequently cited at the European level.

Strong media presence

The excellent results achieved by ifo economists in research and in the public policy debate also led to an excellent result in the 2019 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 economists.

Table 4:
ifo Economists in the FAZ Overall Ranking, 2019

Ranking	Name	Points
2	Clemens Fuest	468
20	Ludger Wößmann	97
33	Joachim Ragnitz	68
44	Andreas Peichl	54
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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 2019, the range of services was extended to include the following:

A survey to produce the **ifo Education Barometer** was carried out in 2019 for the sixth year in a row. In the year under review, particular emphasis was placed on educational inequality. This reveals that the Germans correctly assess the extent of educational inequalities: the majority do not assume any great difference in performance between the sexes or between urban and rural areas, but they do expect there to be differences according to social and immigration background. Accordingly, they see inequality of opportunity as a

problem among children that come from different social backgrounds or between those with and without a background of immigration.

The **ifo Hands-On High-Quality Journalism Days** series, which was launched in 2015, took place in January 2019. Fifteen students from the German School of Journalism and six editors from Bayerischer Rundfunk attended the event. More information is available in the “Communications” 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. In 2019, the Center for Economics Education in Siegen for the first time provided support for teaching the contents of this advanced training course, which is conducted in cooperation with the Association of Bavarian Business Philologists. A total of 35 business educators from all over Bavaria took part in the training. Another event takes place annually in cooperation with the Dillingen Academy for Teacher Training and Personnel Management (ALP). Since 2018, a cooperation agreement has stipulated that the ifo Institute will provide the speakers and the ALP the premises and organization for this joint training event entitled “Current Research Issues in Economics.” During this training, 20 participants were able to benefit from the expertise of the ifo economists.

Work on building up a **family business database**, which was started in 2017 on behalf of the Foundation for Family Businesses, continued in 2019. 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. The basis for the 2019 Annual Monitor is a representative survey conducted from April to July 2019 in which more than 1,400 family businesses participated, addressing the question of what the European Union’s economic policy should look like in the future.

DEVELOPMENT OF THE IFO INSTITUTE AS AN ORGANIZATION

As one of the Leibniz Institutes, the ifo Institute is evaluated by the Senate of the Leibniz Association every seven years. This evaluation forms the basis for

the funding decision by the federal government and Länder at the Joint Science Conference. The ifo Institute underwent its periodic evaluation on July 1 and 2, 2019.

The evaluation is designed to independently assess the development of content and structure over the previous years as well as of plans for the future. External reviewers assess the extent to which meaningful work is being done in science and research, in consultancy and services, and in other specific fields. In addition, they look at whether the ifo Institute has a convincing concept that consolidates individual studies and develops them further. Collaborations with universities and other institutes are also assessed along with international orientation and visibility. Ultimately it is about how ifo transfers the results achieved to other areas of society, how it develops and supports junior researchers, and how it promotes gender equality.

The ifo Institute succeeded in retaining or even exceeding the superlative results it achieved in its last periodic evaluation, which took place in 2012. Special mention was made of the consistently very good to excellent achievements in research, policy advice, and service, as well as of the important role of the CESifo and EconPol networks and the outstanding Institute management.

Last year also saw some important changes in the administrative areas. In January 2019, the central Press, Publications, Conferences department 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. In August 2019, Mr. Thomas Walter succeeded Ms. Dehof as **Head of the Finances and Centralized Services** department. Mr. Kumar Subramani took over as head of IT in 2019. One of his current responsibilities is overseeing the establishment of a more process-oriented IT service management setup. He aims to put a particular focus on promoting IT standards and IT services and on better fulfilling user requirements for quantifiable and reliable services in the future.

Following the introduction of the GDPR, the ifo Institute is endeavoring to meet all the requirements to protect the data of its employees and also of external users. To this end, a new **data protection concept** has been

drawn up, among other measures. IT worked closely with the legal affairs officer to identify and implement specific measures that help further establish data protection at the ifo Institute. A manual that outlines the concept is available to ifo employees.

To promote and support project acquisition and processing, a **contract studies service team** was established in 2019 to provide administrative support to the research areas. The team consists of a scientific coordinator (50% of their capacity) and three research project coordinators (25% each).

A key project in the year under review was the **re-launch of the ifo website**. This was preceded by an in-depth preparation process that focused on redesigning the website and, in particular, the ifo Institute branding. Based on the fields of action derived from the ifo mission statement, the findings from the knowledge-transfer project (funded by the German Federal Ministry of Education and Research), and several workshops, a clear set of targets was developed and then implemented. The website is now the hub of ifo communications. ifo and CESifo are now separate entities and maintain separate websites. Now, alongside presentation of the internal organizational structure and the ifo products, topics that are of strategic value to the ifo Institute are highlighted with links to the relevant ifo experts. Overall, the content is presented such that it meets the specific requirements of the ifo target groups. The relaunch in April 2019 marked the peak of this project for the time being, but it will continue running as an ongoing process of optimizing the website. More information is provided in the section on the Communications department.

In 2019, the **LMU-ifo Economics & Business Data Center (EBDC)** team continued to work on establishing new strategic research partnerships and strengthening existing ones and can now report further successes in terms of content. These are set out in the chapter on the EBDC within this annual report.

CESifo GmbH also developed positively in the year under review. Founded in 1999, CESifo GmbH (Munich Society for the Promotion of Economics – CESifo GmbH) serves to connect the LMU's Department of Economics and the ifo Institute with the international research community. CESifo GmbH supports the inter-

national CESifo Research Network. 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 have already been covered in connection with research. The training events held in house as well as numerous research stays at top American universities in 2019 were particularly pleasing. Other highlights included ifo researchers again being invited to present papers at international, refereed conferences (180), and numerous ifo doctoral students expanding their expertise at summer schools. In addition, ifo doctoral students are given the opportunity to attend courses. ifo's non-scientific staff is also offered ongoing training: overall, 243 further training measures were approved in 2019, of which 201 were also conducted in that year.

The orientation of the entire ifo Institute organization toward excellent performance in all areas of work is the objective of the **ifo management system**, which is certified according to DIN ISO 9001 and the functionality of which is checked annually by external auditors. A two-day recertification audit was carried out in February 2019, 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 scientific staff paid off. The share of female doctoral students as of December 31, 2019 was exactly 50% (52% if those doctoral students who were on parental leave as of that date are included), meaning that a balanced gender ratio among doctoral students has already been reached.

Personnel capacity reduced compared to the previous year. As of December 31, 2019, the number of staff at the Institute fell by 11 to 201.

Further education
and training for
researchers

**Strong and stable
financial situation**

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 2019 shows a surplus of EUR 195,000. This was channeled into reserves, increasing the Institute’s assets to a total of EUR 2.694 million as of December 31, 2019.

In 2019, the ifo Institute received public funds totaling EUR 10.863 million as part of joint research funding based on Art. 91b of the Basic Law (German consti-

tution). Of this amount, EUR 10.548 million was used for current operations and EUR 315,000 was used for investment. No reserves were available to the ifo Institute in 2019.

Finally, we would like to extend our thanks to all of the ifo Institute’s staff. It is due to their high levels of commitment that the ifo Institute can look back on 2019 as being a very good year.

Munich, May 2020

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 policymakers' actions from a public choice and political economics point of view.

How are financial and fiscal policy instruments that are in use in Germany, the European Union, and internationally to be evaluated? How do policymakers and institutions influence economic policy and its outcomes, e.g., economic growth? The ifo Center for Public Finance and Political Economy deals with these topics and derives policy recommendations from them.

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

Projects Completed in 2019

EconPol: Structural Reforms and Income Inequality: Who Benefits from Market-Oriented Reforms?

K. Gründler, N. Potrafke for EconPol Europe, October 2019 to December 2019, publication as *EconPol Policy Report* 18, December 2019.

We find no statistically significant relationship between structural reforms and the distribution of incomes. We do find, however, that households at the bottom of income distribution gain more from structural reforms than individuals at the middle of income distribution. Examining the support for reforms on the household level, we find that high-income earners tend to support reforms, whereas low-income earners

support reforms to a lesser extent. Our results point to misperceptions in how individuals expect reforms to influence their income position.

Evaluation of Tax Concessions

C. Fuest, S. Gäbler, K. Immel, F. Neumeier, B. Kauder in cooperation with the FiFo Institute, Cologne, Leibniz Centre for European Economic Research (ZEW), Mannheim, and Fraunhofer Institute of Applied Information Technology FIT, Sankt Augustin, for the German Federal Ministry of Finance, June 2017 to October 2019, publication as *Evaluierung von Steuervergünstigungen*, FiFo Institute, Cologne, 2019.

Six measures received an overall rating of "good". These benefits accounted for a total volume of EUR 2.7 billion in 2018. Seventeen tax benefits accounting for a total volume of EUR 2.9 billion were rated as "sufficient". This latter rating intentionally uses the same term that is used in schools. It is meant to indicate that the benefit in question "passed" the evaluation but that there is significant room for improvement. Ten tax benefits accounting for a total volume of EUR 1.8 billion received an overall rating of "weak". These tax benefits were found to fall far short of their expected objectives and therefore to require urgent fixing. Such measures must be redesigned completely or else discontinued.

Report on the Effect between Debt, Budget Composition, and Growth

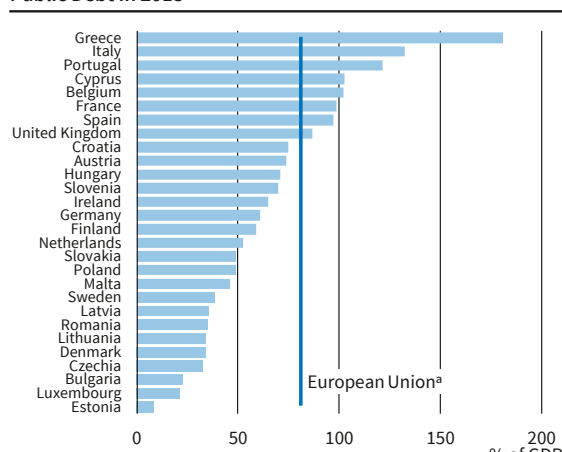
L. Dörr, K. Gründler, M. Mosler, N. Potrafke for the Konrad-Adenauer-Stiftung e.V., February 2019 to May 2019, publication as *ifo Forschungsbericht* 107, Munich 2019.

The study examines the relationship between public debt, measures to consolidate public budgets, and economic growth. The composition of the public budget and the growth effects of individual budget categories is investigated in detail. The study compares the size of the individual government expenditure categories in Germany with the budget composition of the other EU member states. This comparison shows that Germany spends above-average shares of its public budget on social protection and healthcare. Spending on education, transport, environmental protection, and defense is lower than in comparable European countries. The empirical analysis shows that government debt and economic growth are negatively correlated, and that budget consolidation by way of expenditure cuts is preferable to consolidation through tax hikes. Consumptive expendi-

Empirical analysis of public budgets

ture is negatively associated with growth and thus provides room for growth-friendly consolidation. Research and development expenditure and expenditure on education tend to be positively correlated with growth.

Public Debt in 2018



^a The value for the EU is the average of the countries of the European Union.
Source: World Bank data

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We examined the so-called *Hauptansatzstaffel* for municipal spending of the horizontal fiscal equalization scheme in North Rhine-Westphalia. The *Hauptansatzstaffel* describes a nonlinear relationship between population and fiscal need. The *Hauptansatzstaffel* and other elements (demography, pupils, social spending, centrality, and area) give rise to a figure describing fiscal need in the horizontal fiscal equalization scheme. The weighting of population in the *Hauptansatzstaffel* was investigated based on public finance theory and an empirical analysis. We employ regression techniques and simulate redistribution effects in the horizontal fiscal equalization scheme.

Current Projects

ifo and FAZ Economists Panel

J. Blum, L. Dörr, K. Gründler, M. Mosler, N. Potrafke, 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 nuanced 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 standardized surveys in a digital form. The panel takes national and international issues into account, focuses primarily on qualitative information, and asks the economists for their appraisals and expectations.

In 2019 the following topics were covered: coal phase-out by 2038, thirty years after the fall of the Berlin Wall – what about the gap between east and west?, carbon pricing, the debt brake, and the compromise on the basic pension. The survey results are prepared and published in the *Frankfurter Allgemeine Zeitung* as well as on the ifo homepage. Moreover, the results are published in an extensive way in *ifo Schnelldienst*.

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

K. Gründler, N. Potrafke for the Konrad-Adenauer-Stiftung e.V., October 2018 to February 2019, publication as *ifo Forschungsbericht* 103, Munich 2019.

The study examines the use and meaning of the term “austerity” in public and academic debate. Usage of “austerity” has risen sharply since the financial crisis, but there is no consensus on its substantive meaning. Scientifically, the term is used primarily in heterodox journals. Since there is no universal definition of the term “austerity,” empirical measures used to classify periods of austerity differ widely. This ambiguity is reflected in empirical studies, which, depending on the measure used, show positive or negative real economic impulses triggered by austerity policies.

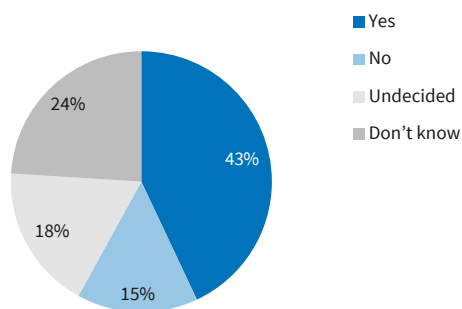
What does “austerity” actually mean?

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

S. Gäbler, L. Dörr, B. Kauder, M. Krause, N. Potrafke for the Ministry of Homeland, Municipal Affairs, Construction and Equality of the State of North Rhine-Westphalia, May 2018 to February 2019, publication as *ifo Forschungsbericht* 105, Munich 2019.

Effectiveness of the Basic Pension

Do you think that the basic pension is sufficient – i.e., that the basic pension is high enough?



Source: Economists Panel, December 2019.

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Research Study on the Evaluation of Energy Policy Measures in Bavaria

M. Mosler for the FDP Parliamentary Group in the Bavarian Parliament, August 2019 to January 2020.

Politics in Bavaria faces a major challenge in ensuring the energy policy triad, i.e., the security of supply, economic viability, and environmental compatibility. Both nuclear and coal plants will go offline in the next few years, while grid expansions are constantly delayed. The question of how power supply in Bavaria can be secured remains unanswered. At the same time, the heat and electricity sector in Bavaria is destined for a complete de-carbonization, which indicates the growing importance of green energy supply.

The task of the project is an economic assessment of energy policies in Bavaria and the scientific accompaniment for drafting a strategic policy paper. The consulting service employs a multi-dimensional approach taking energy economics, fiscal parameters, and aspects of political economy into account. The project team supports the members of parliament with scientific expertise to prepare evidence-based policy decisions and a political strategy paper.

Model Calculations for the Fifth Sustainability Report of the Federal Ministry of Finance

K. Gründler, B. Läßle, R. Lehmann, M. Mosler, N. Potrafke in cooperation with ifo research professor M. Werding, University of Bochum, for the Federal Ministry of Finance, March 2019 to August 2020.

The long-term development of German social public finances and aggregated public budgets are simulated to identify potential threats to the fiscal sustainability of the German public finances. The project will rely on simulations until 2070 in the areas of demography, the labor market, macroeconomic conditions and growth, and demography-driven public expenditure to assess the effects on aggregated public finances. It considers population growth forecasts, employment, and scenarios regarding the macroeconomic potential growth.

Studies in Political Economy and Defense Economics

J. Blum, ongoing doctoral project.

In this ongoing doctoral project, various topics at the interface of public finance – in particular defense spending – and political economy are examined. One study investigated whether changes of government influence compliance with international agreements and applied the NATO 2 percent spending target as a test case. Another study estimated demand functions for military expenditure and examined differences in the spending behavior 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 globalization on public finances, public sector performance, and inequality. The project also examines how these factors influence the rise of populism and political polarization.

A project on public finances, populism, and political polarization

Studies on Taxation, Public Finances, and Regional Economics

S. Gäbler, ongoing doctoral project.

This PhD 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.

Examining the fiscal sustainability of public budgets

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

ifo Center for Labor 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 labor 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 a postdoctoral researcher, comprised of three doctoral students, and 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 for 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 percent of women experiencing intimate partner violence in their lifetime. In many developing countries, this rate far exceeds 30 percent. Against this background, 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 a developed and a developing country's perspective. In so doing, it uses sound theoretical frameworks to derive hypotheses and, based on these, implements empirical approaches that draw upon various unique data sources and utilize 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 behavioral experiment (an investment game). This data collection represents the first attempt to combine a large-scale survey with a behavioral 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 such as cooperativeness, trust, and reciprocity. The newly collected data will also allow for a first application of causal inference methods to experimental data on social behavior, thus unearthing policy interventions that foster or hinder immigrant children's social integration.

A hallmark study on immigrants in the German education system

ECONOMIC AND POLITICAL EFFECTS OF CLIMATE CHANGE

Understanding the economic and political effects of climate change is one of the crucial preconditions for tackling climate change in an efficient manner. Like-

Analyzing economic and political impacts of climate change

wise, it is essential to understand the impact of pollution, for example air pollution. The center analyzes the economic and political impacts of long-term climate change and short-term climate shocks. In particular, we analyze which mechanisms underlie the causal mechanisms. The Center uses state-of-the-art microeconomic methods and combines data on economic, political, and historical outcomes in an innovative way to identify causal mechanisms.

Munich and Upper Bavaria. This study describes female labor market participation over the past 20 years in Germany and especially in Bavaria in order to produce policy recommendations regarding an increase in female employment. The employment rate of women is rising; however, a shortage of skilled workers prevails. Potential improvement lies not only in female labor market participation but also in women's number of working hours.

Projects Completed in 2019

Employment Effects of Reforms to Increase the Employment of Women and Elderly Workers

V. Meier for the Chamber of Commerce and Industry for Munich and Upper Bavaria, May 2019 to October 2019.

This study investigates possible employment effects for women and elderly workers of sociopolitical and tax reforms.

Incentives for the Elderly to Remain in the Labor Force

V. Meier, V. Endl-Geyer for the Chamber of Commerce and Industry for Munich and Upper Bavaria, October 2018 to February 2019.

The study was conducted under the framework agreement with the Chamber of Commerce and Industry for Munich and Upper Bavaria. Currently, the German labor market is strongly confronted with the effects of demographic change, which leads to a shortage of specialists in Germany. This study investigates the development and the status quo of elderly workers' labor force participation, focusing on Bavaria. It also looks at the consequences of lowering the retirement age and offers policy proposals designed to retain elderly workers in the active labor force for longer.

Incentives for an Increase in Female Employment

V. Meier, V. Endl-Geyer for the Chamber of Commerce and Industry for Munich and Upper Bavaria, October 2018 to August 2019, publication as *IHK Impulse für die Wirtschaftspolitik*, Munich, 2019.

The study was conducted under the framework agreement with the Chamber of Commerce and Industry for

Current Projects

Economic Uncertainty and the Family (EcUFam)

P. Reich, F. Siuda, M. Fabel, supported by the Leibniz Association, July 2015 to June 2020.

The junior research group, EcUFam (Economic Uncertainty and the Family), looks at issues related to the economics of violence against women. 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).

The Economics of Violence Against Women (EconVAW)

S. Amaral, E. Guarnieri, P. Fernández Kolb, V. Endl-Geyer., supported by the Leibniz Association, January 2019 to December 2024.

The junior research group, EconVAW (The Economics of Violence Against Women), looks at issues related to the economics of violence against women. As part of the project, several doctoral projects are being funded by the Leibniz Association and conducted by E. Guarnieri (ongoing doctoral project, as of September 2016), V. Endl-Geyer (ongoing doctoral project, as of January 2019), and P. Fernández Kolb (ongoing doctoral project, as of November 2019).

The Causal Effect of Child Custody on Child Outcomes: Evidence Using Randomization of Judges to Divorce Cases

A. Hasselqvist, ongoing doctoral project, since September 2019.

Studies on incentives for different segments of the labor force

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 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 advances the world's technological frontier. However, little can be learned from such general macroeconomic insights for concrete policymaking at the micro level. The research program 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 analyzes 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 for 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: LABOR MARKETS AND LIFECYCLES

The first research area analyzes the importance of education for individual opportunities in the labor market and in everyday life, focusing on individuals and their

employment lifecycles. It studies the role of skills for 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. Furthermore, the Center investigates the opportunities and limitations of adult education and training and of lifelong learning. For example, a dissertation submitted in 2019 examines how final grades affect the probability of being invited for a job interview. Another study of 2019 evaluates the reform on dropouts from upper-secondary school in Germany in the 1960s, with the result that the reform increased the later income of the affected students.

EDUCATION AND LONG-TERM DEVELOPMENT: ECONOMIC GROWTH AND PROSPERITY

Beyond its individual impact, education is also decisively important for 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. In 2019, for example, an EENEE report was published that estimates the economic benefits of improving educational achievement in the European Union. An additional focus is on an historical perspective, such as how the diffusion of education before and during industrialization changed historical development. In addition, the historical perspective is combined with the modern perspective by assessing the long-term persistence of historical circumstances for economic development today.

DETERMINANTS OF EDUCATION: CULTURE, RESOURCES, AND INSTITUTIONS

Given the central importance of education for 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. The research on these determinants often draws on rich micro data from various international student achievement tests. Research in this area focuses on topics such as the integration of immigrant children, the effectiveness of teachers, the remediating effects

Exploring the dual vocational education system in German-speaking countries

of mentoring programs, 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 program for secondary-school students. Furthermore, a dissertation completed in 2019 examines how the alternative uses of student assessments, teacher specialization, and the membership of Eastern European countries in the European Union affect student achievement.

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. In 2019, for example, a project was launched to evaluate school system reforms in Germany, such as the introduction of grading in the first years of primary school and grading of social behavior. 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 sixth ifo Education Survey, released this year, was on the public's opinions on educational inequality and the extent to which Germans support measures to reduce inequality in the education system. The Center furthermore coordinates the European Expert Network on 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.

The sixth ifo Education Survey was on educational inequality

Projects Completed in 2019

Microeconomic Analyses on Determinants of Individual Labor Market Outcomes

L. Simon, completed doctoral project, publication of results as *ifo Beiträge zur Wirtschaftsforschung* 83, Munich, 2019; *European Economic Review*, forthcoming; *CESifo Working Papers* No. 6832, 2017; No. 6858, 2018; *IZA Discussion Paper* No. 11857, 2018; *ifo Working Paper* No. 281, 2018.

This doctoral project analyzes the impact of education and other determinants on labor market outcomes using microeconomic methods. The first paper uses a randomized 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 labor market. 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 high-school as well as 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.

A second project analyzes 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 randomized differing information about the education level of refugees. Results show that shifting beliefs towards better education of refugees increases concerns about labor market competition of high-skilled natives but does not affect general attitudes. This is because economic aspects are rather unimportant for forming opinions about refugees, as opposed to humanitarian aspects.

A further project analyzes the effect of a labor market deregulation on the demand and supply side of the labor market. The deregulation was an amendment to the Crafts and Trade Code of Germany regarding the requirement to become self-employed craftsmen. Using individual social security data, firm level data, and microcensus 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 and had no effect on self-employed craftsmen.

The final project analyzes the impact of regional structural change caused by exposure to imports from China and Eastern Europe on 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 later labor market outcomes.

Conditions and Consequences of Education around the World – Microeconomic Analyses

A. B. Bergbauer, completed doctoral project, publication of results as *ifo Beiträge zur Wirtschaftsforschung* 86, Munich, 2019; *Education Economics* 27, 2019; *ifo Working Paper* No. 299, 2019; *NBER Working Paper* No. 24836, 2018.

The dissertation topic spans from generating human capital to its productive use in the economy. The first paper relates education measures to economic development. The following three papers contribute to the understanding of student performance focusing on standardized testing, teacher specialization, and political environments.

The first project assesses the importance of human capital for regional development in sub-Saharan Africa. It regards the influence of education – measured by skills and attendance – on economic activity. The findings suggest a stronger correlation of development with cognitive skills than with quantitative measures of human capital, such as years of schooling. The second paper investigates the achievement impact of alternative uses of student assessments. In result, the expansion of standardized external comparisons associates with improvements in student achievement. The effect of school-based comparison is stronger in low-performing countries. In contrast, only internal testing without external comparison and internal teacher monitoring including inspectorates do not affect student achievement. The third paper investigates how teacher specialization in a field during studies affects student achievement. The paper finds that teacher specialization does raise the academic achievement of boys, but not of girls. Finally, the fourth project examines the influence of European Union (EU) membership of Eastern European countries on student achievement. The findings suggest a positive and statistically significant correlation of EU membership and reading scores.

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 for 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 in the analysis of economic aspects of educational policies and reforms. It aims to support the dissemination of knowledge on the economics of education in Europe.

In 2019, EENEE published two analytical reports and associated policy briefs. The topics include the economic benefits of improving educational achievement in the European Union and education outcomes enhanced by the use of digital technology. In a further task of evidence-based policy advice, the EENEE network answered three ad hoc questions about early leavers from education and training, investing for improving the teaching profession, and returns on education. Finally, EENEE maintains a website on Economics of Education in Europe (www.educationeconomics.org) which – in addition to informing about the activities described above – 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. Lergtporer, L. Simon, and K. Werner, with ifo research professors M.R. West (Harvard) and G. Schwerdt (Konstanz), internal project in continuation of a project funded 2014–2017 by the Leibniz Competition, January 2018 to December 2020. Publication of results in: *Journal of Public Economics* 167, 2018; *European Journal of Political Economy* 53, 2018; *ifo Schnelldienst* 18/2014, 17/2015, 17/2016, 17/2017, 17/2018; 17/2019; *schulmanagement* 6/2016; *Harvard Kennedy School PEPG Work-*

Advising on
educational policy in
the EU

Surveying the adult German population on education policy issues

ing 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; No. 7536, 2019; No. 7556, 2019; No. 7559, 2019; No. 7936, 2019.

The aim of the project is to better understand the public opinion on a broad range of topics in education policy. To that extent, 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 administered 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 allows quantification of the causal effect of the respective information on public opinion.

The ifo Education Survey 2019 surveyed over 4,000 adults and focused on educational inequality. Results show that respondents correctly assess the extent of existing educational inequalities: the majority does not suspect large performance differences between boys and girls or between urban and rural areas, but they do suspect differences with respect to socioeconomic status or migration background. Accordingly, unequal opportunities for children from different social backgrounds or with and without migration background are perceived as a problem. Another key finding is that Germans support the reduction of inequality in education.

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, preferences of political parties, class size, and the effect of gender norms on expected labor market participation.

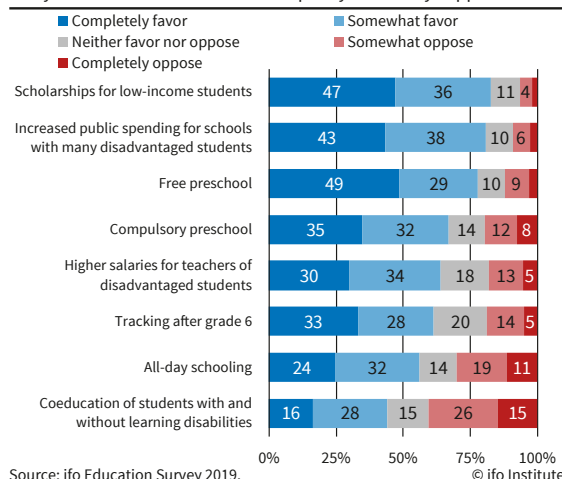
Educational Choices, Market Design, and Student Outcomes

K. Werner, L. Wößmann in cooperation with the Wissenschaftszentrum Berlin, funded by the German Research Foundation (DFG) in the CRC/Transregio 190 “Rationality & Competition”, January 2017 to December 2020, publication of first results in *Journal of Public Economics* 167, 2018; *CESifo Working Papers* No. 7000, 2018; No. 7192, 2018; No. 7536, 2018; No. 7936, 2019; *Rationality & Competition CRC Discussion Paper* No. 128, 2018; No. 146, 2019; No. 149, 2019.

Education decisions are key determinants of labor market opportunities, social mobility, and economic growth. This project looks at the extent to which traditional models can explain utility-maximizing individual education decisions like, for example, the decision between an apprenticeship and university education. A special focus is on potential information asymmetries that can provide an explanation for 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 behavioral factors like self-confidence or time and risk preferences on behavior 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.

Which Reform Proposals Are Supported by Germans?

Many reforms that could reduce inequality are widely supported



Evaluating the Effectiveness of a Mentoring Program

S. Resnjanskij, S. Kersten, F. Hampf, K. Wedel, 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. Often, these children do not make the leap to an apprenticeship position or further schooling. Instead, they are stuck in the transitional system and thus have only a small chance of upward social mobility. Possible reasons for the lack of perspective are inadequate assistance of 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 programs 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 programs in Germany affects school grades, social competencies, and labor market success of students from low-track schools. The evaluation aims to investigate both short-term and long-term effects of the program and to uncover concrete mechanisms behind them to provide generalizable recommendations for the design of mentoring programs. In 2019, follow-up surveys covering the school transition period were conducted to identify potential long-term benefits of the mentoring. Furthermore, the econometric analysis of short- and medium-term effects has started.

Outcomes and Causal Inference in International Comparative Assessments

P. Sancassani, L. Wößmann, M. Piopiunik, ongoing doctoral project, 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. However, 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 professionalization and accountability. The project investigates how policy reforms affected teacher preparation and the impact that this has on student performance. Using international large-scale student assessments such as PISA, TIMSS, and PIRLS, the indirect impact of such reforms on the performance of students in math, science, and reading is analyzed. The following step will be to explore how teacher and school reforms shaped the teaching labor force using TALIS, an international survey conducted on teachers, with a particular emphasis on the role of teacher accountability and teacher assessment.

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

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

The 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. To do so, this project exploits reforms that were implemented in half of the German states and reduced the tracking intensity in secondary schooling. To identify the reform’s 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 investigate effects on students’ reading and math achievement, students’ age at the end of 9th grade, as well as the probability of obtaining a middle-school degree (Mittlere Reife) and attending Gymnasium in grade 9 and grade 10, respectively. The project will also investigate whether effects depend on students’ age, migration background, or socioeconomic background. Besides looking at achievement levels, possible effects on the inequality in students’ reading and math achievement will be explored.

The Effects of Information and Assistance for Parents on Early Childcare Enrollment

P. Lergetporer, H. Hermes, F. Peter in cooperation with ifo research professor S. Wiederhold, Catholic University of Eichstätt-Ingolstadt, funded by the Jacobs Foundation, November 2016 to November 2020.

Studying how policy reforms affect teacher preparation and ultimately student performance

Assessing barriers to early childcare

Early childcare is an essential tool to support child development. Although existing research suggests that children from families with low socioeconomic status (SES) benefit most from center-based childcare, their participation rates tend to be relatively low compared to children from better-off families. This project investigates whether informational and behavioral barriers can explain this underrepresentation of disadvantaged children. In a field experiment with more than 600 parents of childcare-aged children, we randomly provided (i) information about the childcare application process, and (ii) personalized expert assistance to navigate the childcare application process. The baseline survey shows that low-SES parents plan to enroll their children almost half a year later in childcare than higher-SES parents. At the same time, low-SES parents lack basic information about the German childcare system in general, and the application process in particular. In 2019, the focus of the project was on measuring initial post-intervention outcomes. The results show that the treatment increased the number of applications and improved application quality among low-SES parents.

Efficiency and Equity in Education: Quasi-Experimental Evidence from School Reforms across German States (EFFEE)

L. Wößmann, L. Zierow, L. Mergele, B. Arold, E. Grewenig, F. Hampf in cooperation with J. Allmendinger, M. Helbig, Berlin Social Science Center (WZB), funded by the Leibniz Competition, May 2019 to April 2022, publication of first results in *Economics of Education Review*, forthcoming.

German states (Länder) reformed many important aspects of their school systems over the post-war period. Examples include the introduction or termination of grading during the first years of primary school, grading of social behavior, the binding character of school track recommendations, religion as compulsory subject, and compulsory STEM subjects until graduation. How did such reforms affect the academic achievement and socio-emotional development of affected students and their life-course outcomes? This project is conducted in cooperation with the Berlin Social Science Center (WZB).

In order to evaluate the German school reforms, the project will apply up-to-date and appropriate microeconomic techniques. For causal analysis of the effects, it will rely especially upon the difference-in-dif-

ferences approach. The project will use administrative data (e.g., Microcensus) as well as survey data (e.g., SOEP) and the results of standardized student achievement tests (e.g., PISA).

One of the reform evaluations is already accepted for publication in the *Economics of Education Review*, and deals with the question of dropouts from upper-secondary school (Gymnasium) in Germany who did not receive any formal degree until 1965. But then it was decided that all high-track students should automatically receive an interim degree upon successful completion of grade 9. Evaluating the effects of this reform with data from the National Educational Panel Study (NEPS), the study finds that the reform not only reduced switching between school tracks, but also increased successful high-track completion, university entrance rates, and later income.

International Comparative Education Policy Lab

L. Wößmann, L. Kinne in cooperation with ifo research professor E.A. Hanushek, Stanford University, funded by the Smith Richardson Foundation, March 2019 to March 2021.

Countries around the world exhibit widely different educational outcomes; these differences lead directly to the skills of their future labor forces and have clear implications for future economic performance. Understanding what drives these differences has a potentially large impact on policies that can profoundly improve future economic well-being. However, most educational policy discussions and related policy evaluations involve actions within individual countries that have unclear implications for explaining the significant international performance gaps. Instead, when done well, cross-national research exploiting international assessments can make important contributions to these policy debates. The heart of the research project involves deepening and expanding previous work on international comparative education studies, particularly work on substantive differences in the institutions of educational systems. Currently, four projects are planned on the following topics: the identification and production of high teacher quality; the interaction of schooling and immigration; the development of a cross-country matrix of policy changes; and the role of intertemporal preferences of national populations such as patience and risk tolerance for educational outcomes.

Empirical Studies in the Economics of Education

L. Wölßmann, various ongoing research projects, recent publications, among others, in: *European Economic Review*, forthcoming; *Education Economics*, forthcoming; *Education Next*, 2019; *Journal for Educational Research Online*, 2019; *NBER Working Paper* No. 25648, 2019; *CESifo Working Papers* No. 7536, 2019; No. 7556, 2019; No. 7579, 2019; No. 7936, 2019; *Handbook of Cliometrics*, 2019; *Research Handbook on Sociology of Education*, 2019; *Advances in the Economics of Religion*, 2019; 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 various topics in the economics of education. A number of current studies investigate how the provision of specific pieces of information affects the educational policy preferences of the population. Among the topics addressed are the political approval rates for tuition fees, especially in their downstream income-contingent form, higher education spending, childcare allowance, and parent-independent BAföG. A methodological study examines whether incentive provision improves belief elicitation in large-scale surveys.

Several projects use microeconomic techniques to analyze the extensive micro datasets of various international student achievement tests such as PISA and TIMSS. The goal is to determine which lessons can be drawn from international student tests for educational policies aimed at efficiency and equal opportunities. Recent studies deal, among others, with a quantification of the economic returns to improved educational performance in the European Union and with long-run trends in the socioeconomic gap in student achievement in the United States.

Other studies deal with the importance of productivity signals in the labor market using an experiment with CVs among human-resource managers and with the lifetime effects of job-specific vocational education in the labor market. Two contributions on economic history deal with the impact of education on socioeconomic development during the Industrial Revolution and of Martin Luther's quest for education on German economic history.

A report from the Academic Advisory Council at the German Federal Ministry of Economics and Energy em-

phasizes the role of equality of opportunity in education as a core element of the social market economy. The annual report of the Aktionsrat Bildung focuses on the connection between education and region, exposing the usual urban-rural dichotomy as a myth.

Human Capital Production and Migration

M. Piopiunik, ongoing postdoctoral research project, publication of first results in: *Journal of Labor Economics*, forthcoming; *Journal of Human Resources* 54(4), 2019; *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.

One focus of this research project is the application of microeconomic evaluation methods to policy-relevant questions in the areas of education and labor economics. One study shows that differences in the cognitive skills of teachers are an important determinant of international differences in student performance. Another study analyzes 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 randomized choice experiment among HR managers in Germany to investigate which skill signals are effective when entering the labor 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 labor market conditions.

Exposing the myth of the urban-rural dichotomy

One focus is on various migration issues

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

P. Lergepöcher, ongoing postdoctoral research project, publication of first results in *Journal of Economic Behavior and Organization*, forthcoming; *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 Papers* 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 frequently 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-organized interest groups, which might diverge from what is in the public interest more generally. This postdoctoral research project empirically analyzes the determinants of public support for education policies. Public opinion is studied by means of representative survey experiments with particular focus on interest groups and the effects of information provision on public preferences. The individual topics analyzed include, among others, educational spending, tuition fees, educational inequality, educational aspirations, political party preferences, and gender norms. In addition to these substantive topics, the project also investigates various methodological issues, such as what effects financial incentives have on respondent behavior, or what influence the survey mode has on the representativeness of the results.

Econometric Evaluations of Education Reforms in Germany

L. Zierow, ongoing postdoctoral research project, publication of first results in *Economics of Education Review*, forthcoming; *CESifo Working Paper* No. 7806, 2019.

This postdoctoral research project aims at estimating the causal effects of several major reforms of German states over the last decades that changed family policies and the educational system. The results aim to shed

more light on how to design efficient and equitable policies affecting family life, child care, and education. The methodological framework takes particular advantage of the different timing of the reforms' implementation 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 Micro-census) as well as rich survey data (e.g., NEPS, SOEP). In 2019, a study was completed on the introduction of the so-called baby year in the GDR. Since almost all women worked in the GDR, the analysis is not biased by selection of women into the labor market. The alternative to maternal care was comparable for all children due to standardized public childcare available even for the youngest children. The results show that the extension of parental leave from six to twelve months increased life satisfaction among the affected children in adulthood.

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

S. Resnjanskij, ongoing postdoctoral research project.

Using data from an international adult skill 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 labor 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. Results indicate that a one-standard-deviation increase in individualism is associated with an increase in numeracy skills by 0.25 standard deviations.

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, 2017; *Journal of Public Economics*, forthcoming, *BDPEMS Working Paper* 2017-02, *CESifo Working Paper* No. 7957, 2019; *ifo Schnelldienst* 2/2020.

An empirical analysis of what shapes public support for education policies

Political reforms may shift policymaking in two dimensions. First, the authority for policymaking may change between higher and lower levels of government (decentralization). Second, the government may transfer responsibility for certain domains to public sector agents (privatization). This postdoctoral research project examines how the human capital of the individuals affected by these reforms shapes the outcomes of changes in policymaking. Policy changes studied include the decentralization of public employment services in Germany and the privatization policies in eastern Germany following the fall of the Berlin Wall. The project combines large-scale microdata and empirical microeconomic tools. The results suggest, for instance, that low-qualified job seekers are more likely to find employment once local governments assume responsibility for providing public employment services. In the further course of the project, the focus will be increasingly on reforms within the school system.

Institutional Frameworks and Education Decisions

K. Werner, ongoing postdoctoral project. Publication of first results in: *Journal of Public Economics*, 167, 2018; *CESifo Working Papers* No. 7000, 2018, No. 7192, 2018; No. 7936, 2019; *Rationality & Competition CRC Discussion Paper* No. 128, 2018; No. 146, 2019; No. 149, 2019.

Institutional features of an education system have the potential to create hurdles and stepping stones for the students it serves. The aim of this postdoctoral project is to understand how the institutional framework interacts with education decisions made by students at different points in time, and the private and societal consequences of those decisions, for example in terms of labor market outcomes. Therefore, the results will shed more light on two questions: first, they will generate findings on how reforms of the education system, like the inception of new school types or curriculum reforms, affect the education outcomes of exposed students. Second, the project will study how students make education decisions within a given system, and what sources they use to inform their decision.

Education, Skills, and Labor Market Success: Microeconomic Analyses Using Large-Scale Skills Assessments

F. Hampf, ongoing doctoral project, publication of first results in *CESifo Economic Studies* 63(3), 2017; *ifo Working Paper* No. 313, 2019.

The aim of the doctoral project is to gain a better understanding of the interrelation between education, skills, and labor market outcomes. Based on high-quality skill data from PIAAC (“PISA for adults”), the first project studies the effect of schooling on labor-market-relevant cognitive skills, exploiting the staggered introduction of a compulsory ninth grade in basic-track schools across western German federal states. Instrumental-variable results suggest that the additional year of schooling increased numeracy skills of basic-track students by about 0.2 standard deviations.

A second project investigates the effects of economic conditions at high-school graduation on college investment decisions, subsequent skill formation, and labor market outcomes. For identification, the analysis exploits business cycle fluctuations at high-school graduation over a 20-year period across 28 developed countries as a source of exogenous variation in the labor market opportunities of potential college entrants. Findings suggest that recessions at high-school graduation increase college enrollment and graduation, literacy and numeracy skills, monthly wages, and participation in training activities on the labor market.

The third project analyzes the role of cognitive skills in explaining differences in university wage premia across countries. Using international data from the PIAAC Survey of Adult Skills, the study provides evidence that university wage premia vary substantially across countries. Conditioning on skills reduces these estimates by about one quarter. While part of the wage premium in each country captures differential selectivity into university, its extent cannot account for the observed cross-country differences. Results from international difference-in-differences estimations and from an instrumental-variable model exploiting variation in university proximity within Germany suggest that part of the contribution of skills to university wage premia reflects a positive skill effect of university education. Differences in the skill effect of university education partly account for cross-country differences in university wage premia.

The last project analyzes data from the PIAAC Survey of Adult Skills 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.

Evaluating the relationship between education, skills, and labor market outcomes

The Political Feasibility of Educational Decisions

E. Grewenig, ongoing doctoral project.

The doctoral project deals with the political feasibility of educational and labor market decisions, as well as the evaluation of an educational reform in Germany. A first research project investigates whether and how positions of the different political parties affect the opinions of the German population towards educational reform proposals. A second research project methodologically examines how beliefs of the German population can be appropriately illustrated. In particular, it analyzes the impact on voters' response behavior of a classic belief elicitation method frequently used by experimental economists: providing monetary incentives.

The third project investigates the impact of so-called gender norms, such as the norm that mothers should reduce their labor supply when their children are young, on intended labor market supply 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 takes place, each student obtains a recommendation from their primary school teacher on which track the teacher thinks the child should pursue. The aim of the project is to analyze the impact of binding teacher recommendations on the percentage of students attending high-track schools as well as on student achievement.

Microeconomic Analyses of School Reforms

B. Arold, ongoing doctoral project.

The dissertation aims to analyze the effects of school curriculum reforms on long-term attitudes and life decisions of students applying quasi-experimental methods. The first research project looks at the effects of the abolishment of compulsory religious education in schools across German states by applying a panel data approach using data from NEPS, ALLBUS, and SOEP. 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 as well as family and labor market outcomes are analyzed.

The second research project focuses on the topic of evolution in US school curricula. The goal is to understand whether the omission of evolution from school

curricula affects long-term attitudes on evolution and later life decisions such as choice of major at university. A third research project analyzes the effect of the introduction of interstate school curriculum standards in the US on student achievement. A fourth research project aims to evaluate the extent to which educational success is determined by genetic endowments and how educational institutions can mediate genetic differences.

Examining how changes to religious education affect certain attitudes and behaviors

ifo Center for Industrial Organization and New Technologies

Disruptive innovation processes, digital transformation, and regulatory and corresponding institutional responses are often controversially discussed in public, in the media, and in the policy debate without presenting “hard evidence” underlying the arguments. The research program of the ifo Center for Industrial Organization 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 digitalization and innovation affect society and how policy can steer them in a direction so that individuals and firms in a social market economy benefit equally. 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 organizational 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 to 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 REGULATIONS

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”, EURO-CONSTRUCT, and various studies on trade fairs), the Center has built up the relevant expertise 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.

INNOVATIONS

The Center’s research covers a broad range of the determinants and effects of innovation and entrepreneurship, and emphasizes the policy-relevant con-

clusions. 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 different audiences. It does this through its active role in the policy debate (e.g., through regular participation at “Leibniz im Bundestag” (Leibniz in Parliament)), its contact with trade associations, and through the “Framework Agreement on Conducting Economics Studies” with the Chamber of Commerce and Industry for Munich and Upper Bavaria. This primarily applied work in turn inspires new research projects/questions in which the acquired institutional knowledge is employed to find empirical answers. Examples of determinants of innovation that have been analyzed by the Center’s economists include competition, R&D subsidies and tax credits, regional policy, migration, and intellectual property rights.

DIGITAL INFRASTRUCTURE AND THE SOCIO-ECONOMIC IMPACT OF DIGITAL TRANSFORMATION

Digitalization is changing the world at an ever-increasing pace. It has fundamentally altered how individuals behave, how production and business processes are organized, and how market participants interact. At the same time, these processes and their inherent complexity present new challenges to researchers, practitioners, and policymakers. This research area therefore tries to shed light on the socioeconomic impact of digitalization using rigorous empirical analysis. 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.

Rigorous empirical analysis

Projects Completed in 2019

German and European Industrial Policy and the Rise of China

C. Fuest, N. Czernich, O. Falck for the Foundation for Family Businesses, June 2019 to December 2019, publication in *ifo Schnelldienst* 72(22), 2019; 72(23), 2019; 73(2), 2020.

China has undergone rapid economic development in recent decades and can keep up with global competition in many markets. Chinese companies are becom-

ing increasingly present in Germany and on the world markets. In a globalized world with a market economy, this is perfectly normal for an emerging country. However, it may be problematic if Chinese companies enjoy advantages over domestic companies or competitors from third countries in foreign markets through preferential access to resources in their home country. This raises a justified concern that European and German companies will (irreversibly) fall behind in competition with state-supported Chinese companies. The question therefore arises which answers German and European economic policy can and should provide here.

Development of German-Chinese trade and investment

This study gives an overview of the development of German-Chinese trade and investment relations and describes the institutional conditions under which they take place, in particular, for German companies operating in China. Finally, it discusses what measures German and European policymakers should take to ensure fair competition between German, European and Chinese companies.

Car Manufacturing – How the CASE Megatrends Transform the Value Chain

O. Falck in cooperation with J. Koenen, ARC Econ GmbH, for the Chamber of Commerce and Industry for Munich and Upper Bavaria, March 2019 to July 2019, publication in *IHK Impulse für die Wirtschaftspolitik*, Munich 2019.

Due to the interaction of four megatrends (connected cars, autonomous driving, shared mobility, electric vehicles; acronym: CASE), the automotive industry is facing fundamental change in the next two decades. The study examines the possible consequences for the industry in Bavaria along the entire value chain. The Bavarian automotive industry will successfully navigate the ongoing transformation towards electric drives. However, there is a risk that manufacturers could become dependent on leading internet companies in the core area of connected cars.

Rather than subsidizing cell production in Germany, research and development on battery science and technology should be promoted. There is a need for regulation in Germany and Europe in the areas of autonomous driving and alternative mobility services, promoting and rewarding innovation and at the same time strengthening complementarities to public transport.

Digital Competencies – Is German Industry Ready for the Future?

O. Falck, N. Czernich, T. Fackler, S. Schüller, S. Wichert in cooperation with LinkedIn, March 2018 to July 2019.

As a very important economic pillar in Germany, the manufacturing sector in particular must proactively address the shifts that the digital transformation will bring today and in the future. Therefore, this study examined how German manufacturing is positioned with regard to the digital skills of its employees. This analysis is based on extensive, detailed member profiles of the professional network LinkedIn in Germany, which provides new insights into the qualification structure in the German manufacturing sector and extends previous findings from official statistical data. In addition to taking stock of applied and advanced digital skills in different industries, professions, and regions, the study also examines the economic sectors from which digital skills come, how they are distributed across hierarchical levels, and how they have developed over time:

- Today, 48 percent of LinkedIn members from the German manufacturing sector report digital literacy. In the case of advanced digital skills, i.e., skills that enable companies to drive digitization and develop new business models, the figure is only 36 percent; a surprisingly low figure for a country with highly digitized production.
- The higher in the hierarchy the members are, the less advanced digital skills they report: 41 percent of new entrants have advanced digital skills, 40 percent of employees, 30 percent of managers, and only 25 percent of board members.
- Differences are apparent in terms of professions, gender, size of employer, and geographical location: as expected, most software developers report having advanced digital skills (88 percent), but only 42 percent of the project managers, 39 percent of the mechanical engineers, 31 percent of the product managers, and 21 percent of the sales specialists. Women are strong in applied digital skills, whereas men are strong in advanced digital skills (37 percent; women: 33 percent). Employees in small and medium-sized enterprises (SMEs) have fewer advanced digital skills (35 percent) than those in large companies (41 percent). Of the 10 cities with the highest shares of digital skills in the German manufacturing sector, 6 are located in southern Germany.

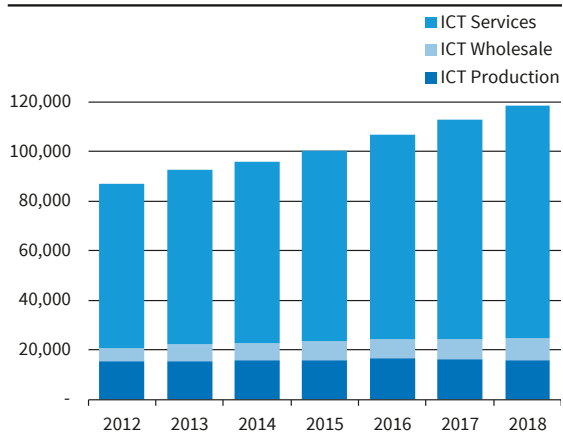
The growing importance of digital skills is illustrated by the fact that the share of all newly added skills is increasing across all sectors. However, digital skills are not yet standard equipment for all employees in German manufacturing. Therefore, attention should be paid to the teaching of applied and advanced digital skills at all professional levels, including executive management levels.

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 September 2019, publication in *IHK Impulse für die Wirtschaftspolitik*, Munich 2019.

The study was being conducted as part of a commission from the Chamber of Commerce and Industry for Munich and Upper Bavaria to provide objective, science-based economic advisory work. Entitled “ICT in the Greater Munich Area, 2019,” the study examined the structure of the ICT industry in the greater Munich area, as well as the industry’s development over the past five years using three indicators: “employees subject to social insurance”, “number of companies”, and “revenue”. Furthermore, it evaluated ICT in the greater Munich area compared to other locations in Germany and abroad, and focuses especially on start-up activity.

Employees Subject to Social Insurance in the ICT Sector in the Greater Munich Area



*Total ICT Sector: +36%
Source: German Federal Employment Agency. © ifo Institute

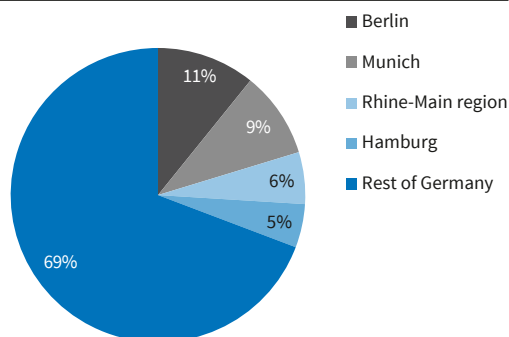
The results of the study are as follows:

- Total number of businesses increased by 11 percent over the 2012–2017 period. Of all businesses in the Munich region, 6 percent are active in ICT.

- The sector had 118,616 employees subject to social insurance (SI) in 2018 (+36 percent since 2012), representing 8 percent of all SI employees in the greater Munich area. Of all ICT employees, 85 percent work in services, the majority of them in programming and IT consulting.
- In the city, the ICT sector generates more than 7 percent of the total sales of all industries.
- Of all the new companies in Germany, 5 percent are founded in Munich. Of all the new companies in the ICT sector, 9 percent are founded in Munich.
- Greater Munich’s ICT sector also did well in comparison to other highly innovative regions in Germany: more businesses, more employees, significantly higher sales, as well as its start-ups having an above-average number of employees.

Greater Munich’s ICT sector

Newly Founded ICT Companies with at Least One Employee, 2012–2016



Source: Establishment History Panel; German Federal Employment Agency. © ifo Institute

ifo Industry Colloquium 2019

P. Brandt, N. Czernich, L. Dorffmeister, O. Falck, S. Litsche, S. Rumscheidt, J. Schrickler, C. Vogel, K. Wohlraabe, A. Wölfl in cooperation with the Chamber of Commerce and Industry for Munich and Upper Bavaria and financially supported by the Bavarian State Ministry of Economics, Regional Development and Energy; publication in *ifo Schnelldienst* 73(1), 2020.

On November 6, 2019, the ifo Industry Colloquium took place again. Around 150 representatives from industry, politics, and science took part. The welcome address by Eberhard Sasse, President of the Chamber

of Commerce and Industry for Munich and Upper Bavaria, was followed by the opening speech by Clemens Fuest, President of the ifo Institute, on the topic of “The German Economy: Economic Situation and Economic Policy Needs”.



Prof. Clemens Fuest, President of the ifo Institute

Current trends and challenges

This was followed in two parallel blocks by the forums “Industry” and “Trade” as well as “Construction industry” and “Services”. In the four forums, the ifo Institute’s industry analyses and forecasts were presented and current trends and challenges in the respective economic sectors were discussed.

This year’s guest speaker was Andreas Peichl, Director of the ifo Center for Macroeconomics and Surveys, on the topic of “Regional differences in the German real estate market”.

Speakers at the forums were:

Forum 1 – Industry: Does Germany need a more active industrial policy?

Discussion moderator: H. Schultz, ifo Institute; sector development: S. Litsche, ifo Institute; expert contributions: O. Falck, ifo Institute, A. Fier, Deutsche Telekom AG, R. Obermeier, Chamber of Commerce and Industry for Munich and Upper Bavaria.

Forum 2 – Trade: Marketplaces and platforms on the rise

Discussion moderator: W. Fischer, CityPartnerMünchen e.V.; sector development: S. Rumscheidt, ifo Institut; expert contributions: G. Wittmann, ibi research, L. Schade, Mercateo, P. Höly, ANWR Group/Schuhe, S. Rumscheidt, ifo Institute.

Forum 3 – Construction industry: Challenges and new approaches to modernization

Discussion moderator: J. Wallner, Bayerischer Bauindustrieverband e.V.; sector development: L. Dorffmeister, ifo Institute; expert contributions: J. Pahl, German Energy Agency (dena), I. Hübner, Vonovia Technischer Service Nord, L. Dorffmeister, ifo Institute.

Forum 4 – Services: How do companies have to organize themselves in order to make optimal use of IT services?

Discussion moderator: C. Geißler, ifo Institute; sector development: K. Wohlrabe, ifo Institute; expert contributions: N. Czernich, ifo Institute, C. Frischmuth, Bundesverband für selbständige Wissensarbeit e.V., B. Wiserner, ConSol Consulting & Solutions Software GmbH.

The next ifo Industry Colloquium will take place on October 28, 2020.

The Economic Impact of the German Trade Fairs

H. Penzkofer for the Association of the German Trade Fair Industry, August 2017 to September 2019, publication in press releases of the AUMA, AUMA-Schriftenreihe Edition 49.

Direct spending by exhibitors, visitors, and trade fair venues impacts almost all sectors of the German economy. Income as a result of this effect, a large part of which is spent again, must also be taken into account. Thus, according to calculations, the result is a boost in output double that of direct spending, a total of EUR 28.0 billion. Trade fairs also ensure that 231,000 people have full-time jobs and generate EUR 4.5 billion in taxes at the federal, state, and municipal level. Thus, besides fulfilling their main purpose of providing a marketplace and transparency for supply and demand in individual sectors, trade fairs also have a considerable overall economic impact.

The Economic Impact of the Frankfurt Trade Fairs and Events

H. Penzkofer for the Messe Frankfurt GmbH, January 2017 to March 2019.

The total aggregate output as a result of the direct and indirect impact of a typical trade fair and event year is about EUR 3.6 billion, or approximately 33,260 gainfully employed persons. Furthermore, the resulting tax revenue of the various authorities (City of Frankfurt, Hesse, and Germany) was estimated. With the

trade fair and event related output of EUR 3.6 billion, the concomitant tax revenue is about EUR 657 million.

The Trade Fair Index

H. Penzkofer in cooperation with Messe Frankfurt GmbH, January 2018 to May 2019.

The results of this analysis clearly show that trade fairs are a mirror of the markets. Key figures for international trade fairs in Germany, like developments in visitor and exhibitor numbers, are linked very closely to trends in German economic output which, in turn, also impacts several countries in Europe. The 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.

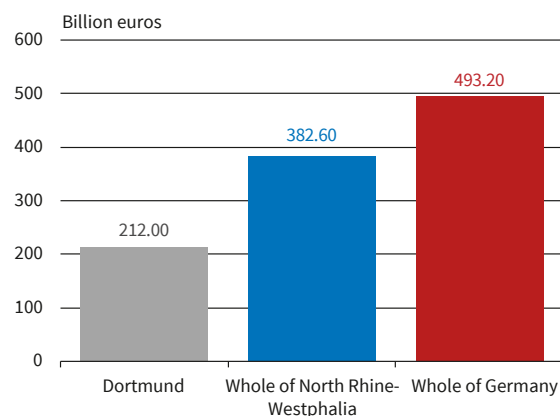
The Economic Impact of the Dortmund Trade Fairs, Congresses, and Events

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

The total purchasing power effect as a result of the direct and indirect impact of a typical trade fair and event year is about EUR 493 million, or approximately 4,240 gainfully employed persons. With the annual revenue relating to the trade fair and event amounting to EUR 493 million, the concomitant tax revenue is about EUR 88 million.

Purchasing Power Effects

Average event year of Westfalenhallen Dortmund



Source: Calculations of the ifo Institute.

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

K. Candel-Haug, completed doctoral project.

This dissertation project focuses on the creation and diffusion of innovation in the context of digitization and migration. Two papers showed how digitization and the possibilities of new information and communication technologies impact firm organization and productivity in various ways. The third chapter of the dissertation project analyzed the contribution of immigrants from new EU member states to innovativeness in Germany and, unlike results for the US, finds significant positive complementarities.

Economics of Innovation in Telecommunications

A. Mazat, completed doctoral project, supported by Deutsche Telekom AG.

In the doctoral project of Andreas Mazat, the first paper addressed the effect of high-speed internet availability on entrepreneurs' decisions to start a business, as well as on firm location. Another study addressed 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. The third dissertation project of A. Mazat examined the importance of improving broadband internet product quality for the competitiveness of German internet providers. In addition, the potential of mobile internet technologies to close gaps in broadband internet coverage across rural areas is considered.

Studies on Empirical Innovation and Regional Economics

T. Lohse, completed doctoral project.

The first part of the study evaluated a place-based innovation policy, the so-called Innovative Regional Growth Cores program. This program has been central to the economic development strategy of eastern Germany but has received only little (empirical) attention so far. The second part investigated how the willingness of consumers to shop online affects the stationary retail sector. The third part of this dissertation was concerned with the question of how the availability of high-speed internet access impacts firm-level investments.

High-speed internet access impacts investment

Current Projects

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 organization 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.

Exchange
of knowledge on
economic policy
topics

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

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

For the EBDC, the year 2019 was strongly influenced by the preparations for the Leibniz evaluation in July. In particular, the EBDC team worked on a strategic, long-term Big Data concept for the future of the EBDC. There has been further change and continuity at the EBDC in terms of personnel.



After many years as a student assistant and most recently as a specialist, our colleague Valentin Reich will

fortunately continue to support us as a doctoral student at the EBDC and at the same time do his doctorate at LMU.

In 2019, the EBDC continued to support numerous research projects, has carried out service projects, and initiated new collaborations.

In particular, the ifo Institute and the EBDC further intensified their cooperation with the Bavarian State Office for Statistics (LfStat). For this reason, the presidents of the two institutions signed a first agreement in April. The specific goal is to actively promote joint research projects that provide new, more detailed insights into regional economic issues in Bavaria. In November, a second agreement was renewed. It will enable the branch office of the Research Data Centre of the Statistical Offices of the Länder at the EBDC to continue their work even after the LfStat moves to Fürth. Thus, researchers can still access administrative micro-data for official statistics of the LfStat and the Federal Statistical Office in Munich in the future.

In addition, the EBDC team has been working intensively on "Open Science" topics. In addition to the annual PhD student seminar on "Good Scientific Practice", there was another very well-attended workshop on "Replicability and Reproducibility in the Social Sciences", which was held by Lars Vilhuber, the Data Editor of the American Economic Association. Furthermore, the EBDC team developed a new platform for the registration and archiving of empirical projects and implemented it in the new ifo intranet. This platform now makes it even easier for ifo researchers to preserve their projects in the long term and make them available for follow-up research.

After the return of EBDC doctoral student Shuyao Yang from her parental leave, the complete EBDC team is eager to tackle new exciting projects in 2020.

Infrastructure Project of the DFG CRC "Rationality & Competition"

H. Mittelmeier, S. Wichert, funded by the German Science Foundation, January 2017 to December 2020.

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 analyze individual- and firm-level (ir)rational decision behavior in a competitive environment and investigate suitable policy responses in such situations to prevent market failure. The infrastructure project supports and links the activities of the 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.

Data as a Resource: The Economics of Data Provision and Access – Status Quo

O. Falck in cooperation with J. Koenen, ARC Econ GmbH, for the Chamber of Commerce and Industry for Munich and Upper Bavaria, July 2019 to February 2020.

The aim of the project is to study the economics of data provision and access, and to contribute to the understanding of data ownership.

Industrial Digital Economy – B2B Platforms

O. Falck in cooperation with J. Koenen, ARC Econ GmbH, for the Federation of German Industries (BDI), December 2019 to April 2020.

Digitization and data are of rapidly growing importance for the European economy. Online platforms play a special role here. In their function as intermediaries, they promote new business models. B2B and B2B2C platforms play a central role in the process of digitization in the German industry, be it in mechanical engineering, the steel industry, or the intelligent connection of millions of devices. Within the scope of the “Industrial Digital Economy – B2B Platforms” study, the current state of economic research is illustrated. Consequently, the scientific analytical framework is applied to selected concrete examples that are representative of the respective platform segments. These case studies serve to illustrate how competition works in practice and how value is generated within the platform ecosystem.

Recommendations on Databases and Methods for the Evaluation of R&D Tax Incentives

O. Falck, A. Peichl in cooperation with KMU Austria and IHS Wien for the Federal Ministry of Education and Research, September 2019 to April 2020.

As of January 1, 2020, the German federal government has introduced R&D tax incentives. By promoting research through tax incentives, the federal government intends to increase the share of R&D investments in Germany's gross domestic product to 3.5 percent by 2025 and hopes to supplement existing project funding. The objectives of this law are to be evaluated after five years at the latest in order to assess their impact on Germany's innovative capacity and their contribution to achieving the share of 3.5 percent. The aim of this project is to develop an evaluation plan.

Promoting research through tax incentives

Evaluation of the Next-Generation Access Program

T. Fackler, O. Falck, S. Schüller in cooperation with Ernst & Young and WIK-Consult for the Federal Ministry of Transport and Digital Infrastructure, 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 to be unprofitable. For such areas, the Next Generation Access Program is meant to incentivize the private expansion of broadband infrastructure 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 focuses on the statistical analysis of the data.

Traffic Management by Means of Congestion Pricing – The Case of Munich

O. Falck, A. Fichtl, A. Wölfl in cooperation with INTRA-PLAN Consult GmbH for the Chamber of Commerce and Industry for Munich and Upper Bavaria, July 2019 to April 2020.

Munich is one of the most congested cities in Europe. Thereby, traffic jams are not only caused by moving

Reducing traffic and congestion

traffic (those people who are driving somewhere), but also by people driving around looking for a parking spot. The project empirically investigates whether and how a fee for either form of traffic can reduce traffic and congestion and can thus provide a political impetus to avoid the overuse of the scarce supply of streets in the inner city and the region of Munich.

Information System “Branchen Special”

H. Hofmann, C. Vogel in cross-departmental cooperation with about 15 other ifo industry experts for the DG-Verlag, Wiesbaden, biannual publication in Bundesverband der Deutschen Volksbanken und Raiffeisenbanken (BVR), DG-Verlag, Wiesbaden.

“Branchen special” reports on the 150 most important branches covered by Germany’s medium-sized companies. Biannually updated industry reports are published on the following economic sectors: services, agriculture, construction, retail, manufacturing, and environment. The reports contain in-depth analyses and forecasts of branch structure and the current economic situation in a clear, standardized 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 utilization and price development monitoring are conducted to evaluate the economic outlook. The economic condition of the branch 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. 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 development.

All reports focus on industry-specific institutional changes and on the way different market participants react to them. Some of these institutional changes are taken up by ifo researchers and become subject to deeper examination in separate projects. An exam-

ple for this transfer of insights and information is the scientific support of a group of students in the national competition YES! Young Economic Summit on the topic “The last-mile challenge – How can the economic objectives of delivery services be agreed with a resource-conserving urban development?”. Based on the information generated in various reports from the trade sector, the school group was successfully supervised and took third place in the Germany final.

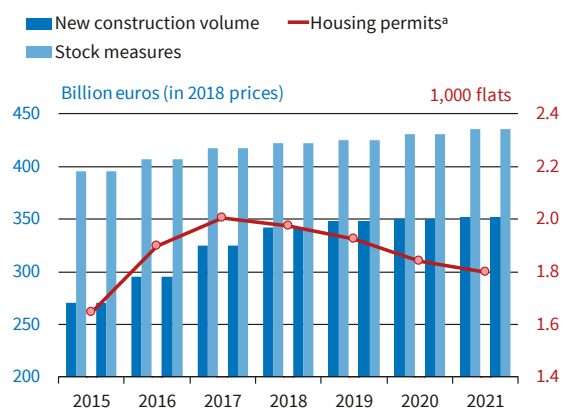
A list of all reports available and their publication dates can be consulted on the ifo website (<https://www.ifo.de/en/node/42951>). Individual reports can be obtained from the Volksbanken und Raiffeisenbanken, while subscriptions are available from the DG-Verlag in Wiesbaden.

Economic Situation and Structure of Europe’s Construction Sector (EUROCONSTRUCT Network)

L. Dorffmeister for the partner institutes, the organizers and participants in the EUROCONSTRUCT conferences, as well as recipients of the conference proceedings and for presentations at specialist conferences, publication in *ifo Schnelldienst* 72(2), 2019; 72(13), 2019, 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 physical variables of construction (number of dwellings). The conferences in 2019 (held in Rome in June, and in Warsaw in November), among other things, focused on the increasing relevance of water management systems, as well as on the future potential of innovative approaches like 3D construction printing, building information modeling or virtual reality. As far as the general development of construction activities are concerned it is striking that in the years 2020–2022 the market expansion is likely to continue at a significantly lower level compared to 2019. Civil engineering and renovation measures will gain importance whereas the building construction segment and new construction are more likely to stagnate. The 2020 summer conference will be held in Stockholm.

Housing Construction in the EUROCONSTRUCT Area

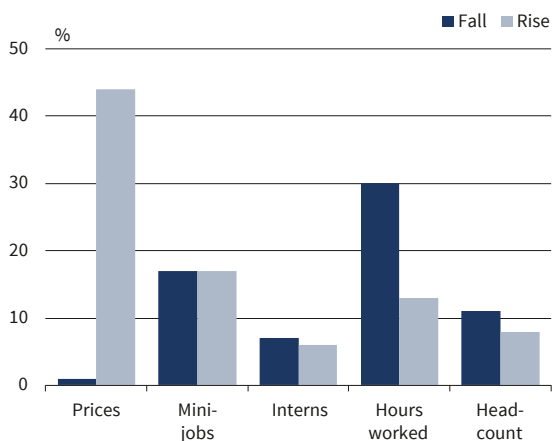


^a Permits in newly constructed and existing residential and non-residential buildings; for Great Britain data on the development of construction starts was used. Source: EUROCONSTRUCT. © ifo Institute

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 based on this data are released in *ifo Schnelldienst*.

Adjustments Following the Minimum Wage Increase^a



^a Only those businesses that were affected by the minimum wage increase. Source: Randstad-ifo Personnel Manager Survey. © ifo Institute

Four times a year, the ifo Institute surveys personnel managers in manufacturing, wholesaling and retailing, and 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, free-

lancers, outsourcing, internal transfers, working time accounts). The aim of the project is to provide insights into the role of flexibility measures in business cycles on a long-term basis. Changing special questions are also devoted to current personnel policy issues. The results of selected special questions are published on the ifo Institute’s homepage and also in the *ifo Schnelldienst* on a regular basis. In 2019, special questions were asked on data-driven recruitment methods, the Working Time Act, the Bridge Part-Time Act, and the minimum wage.

Data-driven recruitment methods

The Economic Impact of the Munich Trade Fairs

H. Penzkofer for the Messe München GmbH, January 2019 to December 2020.

The objective of this project is to calculate the direct and indirect production and income effects as well as the resulting tax revenue of the Munich trade fairs. Based on surveys conducted for the project among visitors and exhibitors at selected Munich trade fairs, the total number of visitors and exhibitors and their expenditures 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 expenditures (e.g., accommodation, stand construction).

The Economic Impact of the Trade Fairs and Events in Oldenburg

H. Penzkofer for the Weser-Ems Halle Oldenburg GmbH & Co.KG, September 2019 to December 2020.

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

Essays in the Economics of Digitization

J.V. Alipour, Roland Berger scholarship holder, ongoing doctoral project.

In one of his projects, he investigates which factors favor and hinder the diffusion of information and communication technologies (e.g., cloud computing applications) across firms. The main focus lies on regional characteristics at companies’ locations, such as the

availability of broadband internet or the composition of the population. The project is based on a newly compiled data set which, due to its comprehensiveness and richness of detail, is expected to yield valuable insights.

Economics of Innovation in Telecommunications

V. Lindlacher, ongoing Ph.D. project, scholarship from Deutsche Telekom AG.

The doctoral project deals with determinants of innovation in telecommunications and investigates its underlying mechanisms, applying individual level data.

In one project, Valentin Lindlacher calculates own- and cross-price elasticities of demand between internet contracts with different technologies and offering different bandwidths. Based on this analysis, he suggests drawing the boundaries of the market for broadband internet access along bandwidth and technologies.

Infrastructural determinants for mobile money

In a further project that he started this year with two coauthors from ParisTech and the University of Cape Town, he investigates infrastructural determinants for mobile money in different sub-Saharan African countries. He applies modern data, such as light-light satellite data and geoinformation software.

Digitization in Research and the Economy

V. Reich, ongoing doctoral project.

This doctoral project is concerned with the chances and risks of new digital technologies as well as incentives for their adoption. Central aspects are data availability, artificial intelligence, and technological skills. The focus of the research is the impact of these factors on the industrial sector, labor markets, and the market of knowledge. Additionally, new technologies are utilized directly in the analyses. Unconventional and unstructured data is investigated and datasets are combined using machine learning to create new and innovative data.

Enterprises' Constraints and Policies

S. Yang, ongoing doctoral project.

This doctoral project contains four chapters that investigate firms' behavior under different circumstances. The first chapter studies firms' contemporaneous and

prospective policies when the firms are constrained by a lack of manpower. The second chapter looks at the effect of partial VAT rebate on the adjustments of core and peripheral products within multi-product firms. The third chapter deals with firms' export decisions, with a special focus on multi-destination firms when facing restrictive TBT measures from importing countries. The last chapter exploits the effect of maritime piracy on firms' choice of transport mode.

Socioeconomic Impact of Broadband Internet

S. Schüller, ongoing postdoc project, publication as *CESifo Working Paper* No. 6129, 2016; in *Wirtschaftsdienst*, 96(8), 2016; *Regional Science and Urban Economics* 77, 2019; *Research Policy* 49(1), 2020.

The ongoing processes of digitization in economy and society certainly have important implications, not only for economic growth but also for labor 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 projects focus on the causal impact of ADSL2+ broadband availability on voting behavior and on firm performance, both exploiting a local public broadband infrastructure delivery program in the Province of Trento, Italy. A third project analyzes the impact of digitization on "working from home".

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 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 project is therefore devoted to the development and application of methods for analyzing and linking innovative datasets, in particular the ifo company datasets, with new statistical methods (like machine learning).

Labor Mobility, Incentives, and Innovation

T. Fackler, ongoing postdoc project, publication in *Research Policy*, 2019, 103863.

Building on dissertation projects that focus on the determinants of innovation, this project extends the scope to include both the creation and the consequences of technological progress. In particular, the role of knowledge workers in the process of innovation as well as the effects of digitization on the labor market are explored. 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 the analysis of large data sets.

ifo Center for Energy, Climate, and Resources

The research activities of the Center are determined by the opportunities and challenges that arise in the context of climate change, the scarcity of natural resources, and sustainable energy supply. The results of its research serve as a basis to provide policymakers with in-depth information on the efficiency and effectiveness of climate, energy, and environmental policies. The focus is on topics that are relevant in the longer term and that are mainly analyzed within perennial research projects and, whenever appropriate, in cooperation with researchers from other disciplines and research institutions. Depending on the research question, the Center's research uses theoretical and numerical methods as well as empirical approaches.

Transforming energy systems

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

The characteristics of energy supply in combination with behavioral, security-of-supply, and economic aspects lead to areas of tension in the transformation of energy systems, which the Center analyzes at different regional levels. For example, the effects of energy policy measures on regional added value and employment were examined for the Alpine foothills in a multi-year project that was completed in 2019. The question of the effects of a delay in the expansion of the transmission network from northern to southern Germany was the focus of another project.

Since German energy policy must also be seen in the context of European developments, the research carried out by the Center also takes policies and CO₂ mitigation goals on the European level into account. In this analysis, the Center employs a model of the European electricity market in which wind and solar energy are depicted in detail. The model was developed further in 2019 in order to explicitly integrate the price responsiveness of demand and the acceptance of energy generation technologies. Also, in collaboration with other universities and research institutes, consistent scenarios for the transition of the power market were developed, which allow a meaningful comparison of different electricity market models and their results.

At the center of research on **climate and resources**, which is 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 energy resources.

In the reporting year, the specific research focus was on the design of CO₂ prices and the effectiveness of climate policies in view of the longevity of assets in the energy sector. In cooperation with external researchers, the Center developed a proposal for the design of CO₂ pricing in Germany and presented it, for example, to the environmental committee of the German Bundestag. The Center continued its research on stranded assets by examining how investors and financial markets react to climate policies and how this influences their expectations. Furthermore, it was analyzed how policy measures can be designed to counteract inefficient investment behavior while considering, for example, the incentives of various interest groups on energy markets.

The Center also supported a number of different clients through consulting projects: methods and indicators for improving the monitoring of the bioeconomy were developed for the German Federal Ministry for Economic Affairs and Energy (BMWi) as part of a multi-year project. Also, several of the Center's researchers contributed to the work of the German Advisory Council on Global Change (WBGU), the Steering Committee of the Science Platform on the German Climate Protection Plan 2050, and the project of the German Academies of Science "Energy Systems of the Future." The Center furthermore participated in the Dialogue on Climate Economics of the German Federal Ministry of Education and Research (BMBF).

In addition to its research tasks, the Center maintains a web-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 climate change and energy policy.

Projects Completed in 2019

Determination of Economic Indicators for Monitoring the Progress of the Bioeconomy

J. Wackerbauer, T. Rave, in cooperation with the Leibniz Institute for Bioeconomy (ATB), Potsdam, the Fraunhofer Institute for Systems and Innovation Research ISI at Karlsruhe, and the nova-Institute, Hürth for the German Federal Ministry for Economic Affairs and Energy, April 2016 to March 2019, publication as *ifo Forschungsbericht* 104, ifo Institute, Munich, 2019.

This was the first research project in Germany that developed a systematic and comprehensive method for recording the economic significance of the bioeconomy based on the combination of industry statistics and production statistics. It represents one of the three pillars of the German federal government’s bioeconomy monitoring. The bioeconomy monitoring is intended to cover traditional areas such as the wood industry or the food industry as well as new innovative applications for bio-based materials.

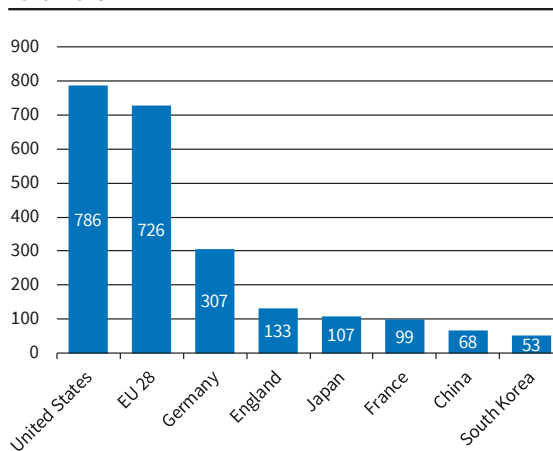
Continuous monitoring will create a knowledge base for political action and a public debate about the bioeconomy. To achieve the objectives of the National Policy Strategy, the bioeconomy indicators developed in the project were refined and methods of data collection were established that allow systematic measurement of all dimensions of the bioeconomy and modeling of interrelationships and mechanisms. This provides the basis for identifying the progress made in the transformation process towards a bioeconomy and potential barriers or trade-offs. Also, it allows policymakers to design and take appropriate measures, if necessary.

During the three-year project period, a total of 65 indicators on three topics (general economic indicators, innovation and education indicators, and indicators for biomass production and use) were compiled and/or developed, and their derivation and application were described and documented. For sectors which can be fully attributed to the bioeconomy, e.g., the food industry, the corresponding data can be obtained with relatively little effort from official statistics. For those sectors that are only partially attributable to the bioeconomy, such as the plastics industry, estimation methods have been developed based on expert

knowledge of bio-based components. These methods have been tested for their empirical feasibility in a pilot study for the year 2015 using case studies that cover four areas of oleochemistry (bio-based surfactants and soaps, bio-based lubricants, vegetable oil-based plastics, and biodiesel).

The proposed innovation indicators on patent and publication activities were also determined for the sub-segments of the pilot study. In interviews, the experts considered the results as very plausible. The figure shows the results of the “patent application” indicator for the example of biolubricants. International comparison illustrates the strong technological base that Germany also has for the other examined fields of oleochemistry.

Transnational Patent Applications for Biolubricants, 2010–2015



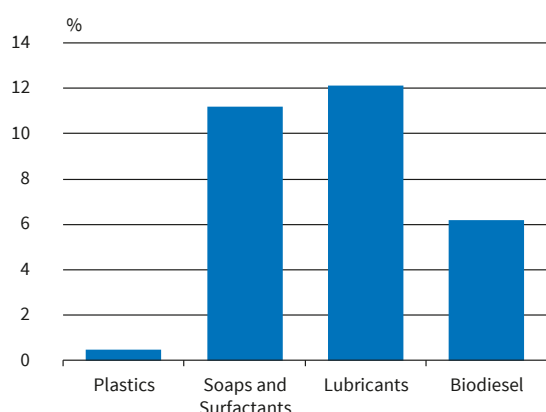
Source: WPINDEX (STN); Fraunhofer ISI.

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For the combination of economic and environmental indicators, the indicator “substitution rate” proved to be well-suited to reflect the progress of the bioeconomy in individual sectors. This indicator describes the share of fossil-based biomaterials that has already been replaced by bio-based products. The figure shows examples of the substitution of fossil fuels by bio-based products in different product groups. This indicator could be combined with both economic and environmental indicators to capture the impact of the transformation from a fossil-based economy to a bio-based economy.

Tracking the progress of the bioeconomy

Substitution Share for Plastics, Soaps and Surfactants, Lubricants, and Biodiesel, 2015



Source: ATB calculations based on ecoinvent (2017); FNR (2014); Weiss et al. (2012).

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Considering the time needed to conduct the case studies for the four sub-areas of oleochemistry, developing a full survey of the economic indicators for all branches of economic activity that are only partially attributable to the bioeconomy would require a considerable amount of work. The extension of the statistical classifications could be a starting point for the further development of bioeconomy monitoring. For this purpose, a further differentiation between bio-based production and non-bio-based production should be introduced at the lowest classification level of the product classification. Furthermore, improvements in production statistics and the extension of reporting requirements in other official statistics would be required. Finally, it should be pointed out that Germany can play a pioneering role in the field of bioeconomy monitoring in the European Union if the legislator creates the appropriate framework. On a broader basis, German bioeconomy monitoring could support and advance European initiatives and develop a vision for European bioeconomy monitoring.

Germany can be a pioneer

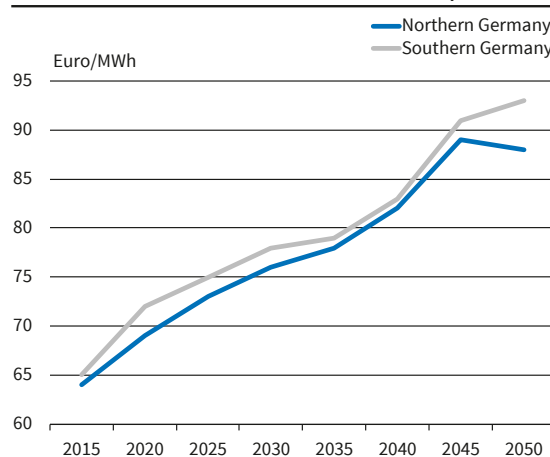
Decentralized Energy Supply Versus Network Expansion

K. Pittel, J. Wackerbauer in cooperation with Technical University of Munich for the Chamber of Commerce and Industry for Munich and Upper Bavaria, March 2019 to December 2019, publication as *Impulse für die Wirtschaftspolitik*, IHK für München und Oberbayern, Munich, 2019.

The study examined the question how Bavaria’s electricity supply can be managed after the decommissioning of the last two nuclear power plants in operation, if the expansion of the electricity grid is further delayed or completely abandoned. It was based on literature reviews of existing studies on the development of energy consumption in Bavaria, evaluation of various energy consumption forecasts, expert interviews, and calculations of the impact on electricity prices using the ifo electricity market model EU-REGEN.

By the year 2025, a capacity gap of around 4.5 gigawatts will arise in Bavaria’s energy supply. This demand surplus can initially be met by electricity imports, the expansion of decentralized power generation, and grid stabilizing measures, which will, however, cause high operating costs. If the expansion of the grid by the two planned high-voltage DC transmission lines, each with a capacity of 2 GW, is further delayed or abandoned, the capacity gap arising by 2025 would have to be permanently closed by electricity imports and increased decentralized power supply. This would result in higher costs for grid stabilizing measures. Abandoning the expansion of the grid would also raise the political pressure to introduce two price zones in Germany. According to the model calculations, the price difference between southern Germany and northern Germany in this case would be EUR 2/MWh in 2025, rising to EUR 5/MWh or 5.7 percent by 2050.

Wholesale Prices in the Scenario without Grid Expansion



Source: Calculations of the ifo Institute with the EU-REGEN model.

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The energy policy options of the Bavarian state government to improve the supply situation comprise the acceleration of licensing procedures, the abolition of the 10-height rule for wind turbines, the improvement of the framework for biogas plants, photovoltaics, and combined heat and power, and increased research funding for new storage technologies.

INOLA – Innovations for 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. Mauer, 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 December 2019.

The objective of the INOLA project was 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 four administrative districts south of Munich, of which three are addressed within the project. The central question of the project was which social and technical innovations are necessary in order 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.

In cooperation with regional actors, the project team formulated scenarios constructed along two dimensions. The first dimension describes the overall economic and social setting and considers, on the one hand, a business-as-usual (BAU) scenario and, on the other hand, a scenario with a trend towards a more sustainable economy and society (GREEN). The second dimension differentiates between focusing primarily on small-scale or on large-scale renewables installations. In the framework of these scenarios, two geography departments at LMU Munich ran simulations leading to possible deployment paths for renewable energy from 2015 to 2035. On the one hand, the simulations were based on the natural potential for renewable energy generation in the region, the existing land use restrictions (e.g., due to conservation areas), and the preferences of the population regarding technology types and installations’ size. On the other hand, the

simulations embedded an investment model delivered by the ifo Institute. The model consists of a net present value analysis that evaluates the profitability of the measures and, therefore, plays an important role in the deployment path resulting for each scenario. This exercise makes it possible to quantify the costs of the energy transition in the region and determine the extent to which additional financial support schemes beyond the existing ones are needed to achieve the deployment paths of the different scenarios.

A second task of the ifo Institute was to determine the economic impacts of the deployment scenarios in terms of value added and employment at the regional level.

The results show that investments in renewables generate an aggregated regional value added ranging from EUR 252–397 million, depending on the scenario. Considering that the value added in 2014 amounted to EUR 9.5 billion, the presented figures translate to a share in value added of between 2.5 percent and 3.3 percent. Most of the employment effects of the energy transition occurs in medium-skilled employment, making up about 63 percent of the full-time equivalent jobs associated with the regional energy transition.

An important assumption made as part of INOLA was that factors of production are fully mobile within Germany. We show that this assumption gives the sectors in the Oberland region access to a very large pool of workers and capital, that is, that of the rest of the country. Thus, the negative effects on other sectors are almost fully “exported” to the region(s) where no investments take place. In our case, the decline in value added and employment occurs almost exclusively in sectors of the rest of the country and not in our region of study. Moreover, we find that although employment in the Oberland region increases in all three categories (low-, medium-, and high-skilled), the increase in medium-skilled employment is stronger than for the other two categories.

The results from our analysis will be used in the decision-making process at local and regional level: INOLA will provide necessary insights and tools to the civil society actors and decision-makers, enabling them to assess the economic sustainability of different land use and energy management options and thus accelerate the joint development of innovation strategies.

Joint development of innovation strategies

Current Projects

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

K. Pittel, M. Mier, C. Weissbart for the German Federal Ministry for Economic Affairs and Energy, November 2016 to February 2020.

Advancing
regionalization

The envisioned goals of the “Energiewende” of increasing the market share of renewables and reducing 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 regionalization of the energy system. Both the increasing 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 actors of society. This implies that, beside technical feasibility and economic viability, social acceptance is becoming an increasingly important aspect in the development of future energy systems.

The dynamic environment of energy systems is also visible in the variety of existing energy system models, though these are still capable of reflecting only part of the aforementioned challenges.

In view of the above, the ifo Institute coordinates nine renowned research facilities and institutes of higher education to pursue the two main goals of 4NEMO:

1. To improve the coherence, comparability, and transparency of energy system models. This concerns not only modeling and publications of model structures, but also the consistency of datasets and technology assumptions.
2. To improve the integration of economic and social factors and the corresponding uncertainty in energy models.

To this end, integrated scenarios that include a detailed representation of economic, social, and technological conditions are developed. Systematic model comparisons and analyses generate a sample space that furthers the understanding of the strengths, weaknesses, and comparative advantages of the respective models to allow for a better understanding of the results.

The project partners’ energy market models are also improved through coordinated development and the general validity of the models is improved by the stronger incorporation of economic and social factors. It is the implicit sensitivity analysis of the model structures, among other factors, that gives the joint research project high relevance. Accordingly, the project will help increase the validity, comprehensibility, and comparability of policy analyses based on energy market models. Future research projects and consulting activities can be better coordinated among the involved institutes through the creation of a common database and the possibility of linking the models. This can also improve the speed and efficiency of future joint projects. Additionally, all project partners pursue a transparent use of models and scenarios, as well as a better socio-political interpretation.

The research effort comprises five work packages. The ifo Institute is working on work packages 1, 2, 4, and 5 and furthermore is coordinating 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 about 40 energy market models. The goal of work package 2 is that the involved institutes adapt their existing models to the new requirements along four clusters (technology, acceptance, regions, and uncertainty). In this context, the ifo Institute analyzed the models that were already selected for work package 1 with respect to their capability to answer major energy policy questions. Within the cluster technology, the ifo Institute developed a framework to implement investments in energy efficiency and short-term demand response in power market models. This allows for quantifying the role of power demand for reaching the reduction of CO₂ emissions.

Furthermore, the ifo Institute is currently extending its own modeling approach within this work package by including the costs related to usually neglected external effects, e.g., 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 over the past year. In the final work package 5, these 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 is an independent scientific advisory body of the federal government, which 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 WBGU is to analyze global change of the natural environment and its implications for humanity and societies and to raise the awareness and draw the attention of the broader public and politicians to global environmental and development challenges as early as possible.

Pursuing an interdisciplinary approach, the advisory council develops flagship reports and policy papers that focus on a specific topical aspect and/or more directly address a specific political process. In its work, the WBGU assumes 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.

In April 2019, the first flagship report of the current term, which started in 2016, was handed over to the federal government. The report, entitled “Towards our Common Digital Future,” characterizes digitalization as a profound process of societal transformation, which today is mostly not systematically harmonized with sustainable development goals. Still, digital change creates windows of opportunity for societal and economic transformations that are necessary to achieve the goals of sustainable development, for example as laid down in the Agenda 2030 or the Paris agreement. In many fields, for example in the energy sector, digital technologies can provide important and sometimes even necessary solutions for sustainable development. However, the report also illustrates that digital change can counteract these goals and, in any case, raises new challenges for sustainable development: it is already conceivable that digitalization will induce fundamental, structural changes in the medium and longer term, for example in labor markets, that raise questions/concerns about future societal structures and about the capacity of societies to govern, for example, the adjustments necessary for sustainable development. Increasing cognitive capacities of technical systems and artificial intelligence

may also change human beings themselves: the report provides an impulse for the science community, society, and politics to consider digitalization and sustainability as two fundamental processes of societal transformation in a more integrated way in the future, and to develop and discuss corresponding governance challenges in depth and in time.

Two WBGU policy papers refined the main conclusions from its flagship report for two political processes. On the occasion of the meeting of the High Level Political Forum on Sustainable Development (HLPF), the policy paper “Digital Momentum for the UN Sustainability Agenda” raised awareness at the level of UN sustainability politics for how relevant digitalization and its governance are for achieving the sustainable development goals. Building upon the agenda of the HLPF, the policy paper focuses on four fields – education, the digitally supported circular economy, modernization of sustainability governance, and extending the scope of the current sustainability agenda for longer-term challenges beyond 2030. It was presented during the meeting of the HLPF. In cooperation with international partner institutions, the WBGU also initiated a process to discuss and develop a charter for a sustainable digital age.

In a second policy paper, the WBGU presented cornerstones of a European way to a common digital future. On the one hand, those cornerstones represent the systematic integration of digitalization into European sustainability policy. On the other hand, European digital policy should be more actively shaped in line with sustainability goals, for example regarding the regulatory framework for privately collected data, and with a new, expanded understanding of infrastructure and the responsibility of the state to provide it in the digital age. The policy paper provides input for the upcoming presidency of Germany of the Council of the EU and relates to the Green Deal initiative of the new European Commission.

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 and her assistant Johannes Pfeiffer. After Prof. Dirk Messner left the WBGU, Karen Pittel was elected as the new co-chair of the council in December 2019.

Achieving
the sustainable
development
goals

Energy Systems of the Future (ESYS) – Board of Directors

K. Pittel, J. Pfeiffer for acatech – National Academy of Science and Engineering, financed by the German Federal Ministry of Education and Research, February 2013 to February 2020.

The project “Energy Systems of the Future” (ESYS) of the German Academies of 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 impulses to politics and society about how to design and implement a more sustainable energy system. ESYS was launched in 2013.

Governance of the energy turnaround

Led by acatech, ESYS brings together experts from various scientific fields, from industry and institutions, and from civil society organizations to identify and discuss challenges, opportunities, and policy options for the governance of the energy turnaround and the realization of its climate and energy policy goals. Interdisciplinary working groups collaboratively review the most recent insights in topics like sector coupling or raw materials for the energy transition. In a format called Analyses, a comprehensive and rather descriptive overview of the insights and background information on the respective topics is provided. Policy options are discussed and evaluated in Position Papers. The working groups are in constant and ongoing exchange with representatives from academia, industry, politics, and civil society organizations. ESYS chooses the topics of the working groups independently.

ESYS is governed by the six-member Board of Directors, to which Karen Pittel was appointed in 2017. The Board of Directors coordinates the working groups and publicly represents the initiative with the support of the administrative and scientific staff of the ESYS secretariat in Berlin. The Board of Directors is also in close exchange with politics, industry, and civil societal organizations. Johannes Pfeiffer assists Karen Pittel in her work for the Board of Directors.

With respect to topics, the working group “(De-)Centralized Energy Systems” finished its reports towards the end of the year. Both the Analysis and the Position Paper will be published at the beginning of 2020. The working group considered both the development to-

wards a more decentralized energy system, which is induced by the transition to renewable energy sources, and the future role of centralized technologies and components in energy systems. The working group concluded that a climate-friendly, stable, and sustainable energy system will require a mixture of decentralized and centralized elements and structures. It arrived at this conclusion by considering not only the supply side of the system but also the necessary extension of the grid infrastructure, digital technologies, and interconnectedness as means to coordinate more decentralized components of the energy system as well as the adequate regulatory framework. In a way that complements this work, the working group “Resilience of Digitalized Energy Systems” studies the far-reaching implications that the digitalization of the growing number of increasingly diverse components and agents of the energy system has for the security of energy systems and energy supply. The working group will develop both technical and regulatory options to deal with these new challenges.

A topical focus of ESYS over this year has been the pricing of CO₂ in sectors that are not integrated into the European Emissions Trading System. The ESYS working group “Electricity Market Design” developed and discussed different options for pricing CO₂ in those sectors. These options were also presented and discussed during an event in Berlin moderated by Karen Pittel. On the future electricity market design and the pricing of CO₂ emissions in Germany, members and personnel of ESYS also exchanged ideas with members and employees of the Bundestag. In a second part, the working group also studies different options to revise the current regulatory approach for tackling and managing congestion in the German power grid. This congestion management is becoming increasingly relevant with respect to both costs and security of supply due to the transformation of the overall system. The working group’s results will be published in the first half of 2020.

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

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

The FoReSee research project analyzes the interplay between policies to mitigate global climate change and the behavior of various participants in financial and fossil fuel markets. The 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 aims to understand private actors' responses to current and expected, potentially uncertain, climate policies, and considers how climate policy design should take these responses into account. FoReSee puts the 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 modeling provides comprehensive guidance on appropriate and feasible policy design.

The team at ifo heads work packages 2, 4, and 5. In work package 2, 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 asset stranding. Moreover, it determines which are the relevant signals from policymakers, and how companies react to climate policy risk and uncertainty. In order to answer these questions, the team analyzes the effects of policy shocks on stock markets, such as the ballot results of two carbon tax initiatives in the state of Washington in the US and the gradual development of a German climate policy proposal initially known as the Climate Levy. These two studies have been published as CESifo Working Papers. Moreover, the team is currently analyzing the interplay between institutional investors and clean/fossil innovation.

Work package 4 takes a political economy perspective and explores how climate policy interacts with energy sector special interest groups and the electorate's heterogeneous preferences. Climate policy will have different impacts on assets, depending on their pollution intensity. To the extent these assets are owned by different groups in society, these assets represent vested interests that manifest themselves in differing political

preferences. At the same time, voters' income inequality and their differing preferences with respect to environmental protection and redistribution have an impact on the varying climate policy platforms of parties trying to represent their constituents. The ifo researchers analyze, using theoretical and calibrated political economy models, how different policy instruments may lead to different outcomes when political outcomes are allowed to be endogenous. Preliminary results on the special interest group part are expected in the first half of 2020. A draft of a paper on party competition was put online as an *ifo Working Paper* in December 2019.

In work package 5, the team at ifo 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 minimize the resulting costs to society. To carry out the analysis, the researchers at ifo, in collaboration with researchers at the University of California at Berkeley, are currently developing a stochastic macroeconomic model that builds on their previous work in numerical modeling. Importantly, this model contains a disaggregated energy sector with explicit representation of different fossil and clean energy assets. The model-building process was initiated in 2019 by a three-week research visit by Alex Schmitt in Berkeley. Initial results are expected in the first half of 2020.

Additional work packages are headed by research teams at the DIW and Humboldt University in Berlin. Work package 1 assesses how climate policies will affect fossil fuel asset stranding, lock-in effects, and rent distribution, using detailed numerical models. Work package 3 studies the behavior of resource-dependent developing countries and how potential adverse reactions to climate policy can be mitigated, combining methods from public policy analysis and economics.

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

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

Calibrated political economy models

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 such as floods, storms, and droughts are still poorly understood. Since extreme events are projected to intensify under global warming, it is essential to gain a sound understanding of the main impact channels through which extreme events cause long-term impacts on economies and societies in order to quantify the overall costs of climate change and inform decision-makers about the implications of mitigation targets and effective adaptation strategies.

The SLICE project aims at filling this knowledge gap. Our analysis covers low-, middle-, and high-income countries. In a first step, we use empirical methods to identify historical long-term effects of extreme events on households and on the macroeconomic level. We place particular focus on the role of public spending and debt, insurance schemes, distributional aspects, and poverty; these are known to be important determinants of 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 on the micro- and macroeconomic level, which are then employed to assess future risks.

To this end, we combine projected hazards with socio-economic data and translate them into direct economic damages. We then use these direct damages as input for the dynamic 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, and assesses strategies to enhance economic resilience, as is critical for, e.g., 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 such as the World Bank, the insurance sector (Munich Re, Swiss Re), and consulting (Standard & Poor's).

Economics of Climate Change – Thematic Coordination: International Climate Policy (InterPol)

K. Pittel, W. Marz for the German Federal Ministry of Education and Research, October 2019 to September 2022.

The BMBF funding line “Economics of Climate Change – Phase II” comprises four thematic areas, each with a number of individual projects. For each thematic area, accompanying activities within the “Dialogue on Climate Economics” accompany and connect the research projects and promote exchange with non-academic stakeholders and the interested public. The “InterPol” project deals with the coordination of topics related to the thematic area (TSP) 4 “International Climate Policy.”

The overarching funding line aims at further strengthening the climate-economic research competence in Germany, connecting the research community even better internally and externally, increasing the application relevance of climate-economic research through greater involvement of stakeholders, and improving the dissemination of research results to target groups outside academia. In this context, the focus of TSP 4 lies on the diverse effects and obstacles of international climate policy, which can be of crucial importance for its successful implementation. The project aims to encourage intensive exchange between the research teams about implementation obstacles and resulting policy implications, and to deliver the results to stakeholders in politics, business, associations, and NGOs at the national, but also European and non-European level.

Karen Pittel and Waldemar Marz organized an own breakout group (“Climate Policy in the Social Market Economy”) at the 6th Climate Forum of the BMBF funding line “Economics of Climate Change” in Berlin in November. Overall, the climate forum focused on the topic “CO₂ Pricing – From Theory to Practice.” Previously, Karen Pittel and Waldemar Marz had already taken part in a kickoff workshop for all individual projects and key topics of the BMBF funding line in the summer. In addition, both took part in regular meetings of the Executive Board (with the topic coordinators of all TSPs and the overall coordination) and the Advisory Board.

ifo Center for International Economics

As the Center's Director took up the position of President to the Kiel Institute for the World Economy in March 2019, the ifo Executive Board decided to initiate a joint appointment process with LMU for a successor. The re-appointment of the professorship is intended to strengthen research and teaching of the economic causes and consequences of globalization. Specifically, the Center will in the future deal with questions on how economic globalization and technical change work together, how to avoid trade conflicts and protectionism, and how welfare gains can be realized through international exchange. It is not only the sum of welfare gains that is of central importance, but also their distribution, including also the question of whether structural change driven by the globalization process creates losers and how this can potentially be compensated for. The Center and its newly appointed Director will thus make a substantial contribution to the ifo research topics of economic growth and sustainability, the future of Europe, and globalization and inter-system competition.

Projects Completed in 2019

Megatrends in World Trade: The New Silk Road – Growth Region between Europe and Asia

G. Felbermayr, A.-N. Sandkamp, M. Goldbeck in cooperation with W.-H. Liu, F. Bickenbach, Kiel Institute for the World Economy, for the Chamber of Commerce and Industry for Munich and Upper Bavaria, November 2018 to April 2019, publication in *Impulse für die Wirtschaftspolitik*, Munich, 2019.

The economic rise of the People's Republic of China since the beginning of economic reforms forty years ago is one of the greatest development successes in world history. China is now the second largest economy in the world behind the United States and is playing an increasingly important role in both the global economy and global politics.

What's more, China has taken initiatives to identify and promote additional growth drivers. Economic policies have been implemented internally to promote innovation and a more efficient use of resources with the aim of implementing a new, quality-based, and sustainable growth model. China was looking externally for new

business partners who could provide new growth impulses and close the demand gap that industrialized countries in particular have left behind due to the financial crisis and the subsequent recession. With this in mind, in fall 2013 China's President Xi Jinping presented the idea of building an economic belt along the Silk Road and a 21st-century maritime Silk Road (One Belt and One Road) together with other interested countries.

The study analyzed the opportunities and risks of this Belt and Road Initiative (BRI) for Europe, Germany, and Bavaria, with a specific focus on Central Asian countries. After giving an overview of the initiative, the study discusses the opportunities and the challenges arising from the Belt and Road Initiative for the global economy in general and the Bavarian economy in particular. One area of focus is the change in the relative competitive position of individual regions and on the shift in the importance of different modes of transport. The study also outlines country-specific risks relating to local institutional deficits, government debt sustainability problems, and political and geopolitical conflicts in the BRI countries. Finally, the study derives recommendations for policy actions for Bavaria, Germany, and the EU.

21st-century
maritime Silk Road

Current Projects

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

R. Aichele, F. Teti, M. Steininger, M. Braml for the Leibniz Association (SAW), January 2016 to December 2020.

The goal of QUANTAGG is to contribute to 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 liberalization and the reordering of the multilateral trade order, and international climate policy. In the last few years, new methods in quantitative trade modeling have become available, but they are only now starting to be used in 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 to what extent trade liberalization has contributed to global production fragmentation and the formation of production networks, taking global value chains 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 results imply that China's WTO accession was a driving force behind the strengthening of production networks with its neighbors. The paper appeared in the *Journal for International Economics*.

In another project module, Rahel Aichele and Marina Steininger investigate how much excessive trade there is when pricing in the environmental costs of CO₂ emissions. Global value chains – in which goods are shipped back and forth multiple times, often over great distances – rely heavily on CO₂-intensive global transportation services (i.e., maritime and air transport). Consequently, CO₂ taxation is expected to affect the structure of global value chains. To be able to quantify the effects of regional and global climate policies with and on global value chains, the module gathers data on the emissions of production as well as global transportation, data on the shares of transportation modes for bilateral sectoral trade, and maritime distances between countries and develops a quantitative trade model with CO₂ emissions and modes of transportation.

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 with the lowest external tariff rate and then transshipping the goods within the FTA – also called trade deflection. The research paper uses a new database to analyze differences in countries' external tariff schedules and finds that the latter correlate strikingly for countries belonging to the same deep FTA. Therefore, in most FTAs, for a 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. In 2019, the paper was published in the *Journal for International Economics*.

Feodora Teti spent six months at the Tuck School of Business at Dartmouth. During her research stay she finalized a novel database on tariffs. The data comprises product-level detailed information on tariffs for 197 countries and their trading partners. It spans 30 years, namely 1988 to 2017, and it is planned to be updated in the future. The data is unique with respect to the time and country coverage as well as the level of detail. With this data at hand, Feodora Teti shows new stylized facts about tariffs and global trade policy. Furthermore, she aims to estimate theory-consistent import demand elasticities leveraging the high-precision data.

Together with Gabriel Felbermayr and Jasmin Gröschl, Marina Steininger finalized a paper about the economic consequences of Brexit. 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. Together with Gabriel Felbermayr, Marina Steininger published a paper about the trade creation effects of adoption of the euro resulting from a reduction in transaction costs.

Marina Steininger was invited to visit the Paris I, Sorbonne University in Paris from March until end of June 2019. During this time, she studied the interaction between weather events, migration, and trade in a general equilibrium framework that makes it possible to estimate and quantify the economic impact of climate change induced migration on sending and receiving countries. First, the paper examines how extreme weather events affect migration. In the second part, a dynamic trading model is further developed.

Martin Braml investigates social preferences for trade liberalization and globalization. The study, which addresses the political economy of trade politics, is based on survey waves of the Eurobarometer. This setup allows identification of national and regional differences in attitudes within the EU.

Additionally, Martin Braml, together with Gabriel Felbermayr, investigates current account discrepancies. These occur if trade flows between countries are misreported in the sense of correct double-entry bookkeeping. In a study published in *CESifo Economic Studies*, the authors show that it is uncertain whether the EU runs a current account surplus or a deficit with the United

States. In the light of increasing global trade tensions, this study received a lot of attention. As the reason for annual discrepancies that are nearly equivalent to the size of the Portuguese economy, the authors argue that tax evasion of multinational enterprises could be responsible, as particularly reflected by discrepancies between Dutch and US statistics.

In another study, which is published as *CESifo Working Paper* and is currently in the process of a journal publication, Martin Braml and Gabriel Felbermayr point out that the EU runs a trade surplus with itself amounting to EUR 307 billion annually, or 2 percent of EU GDP. This self-surplus is logically impossible, as each surplus must necessarily mirror a deficit in the same amount. The authors argue that VAT fraud seems to be the likely reason why exports within the EU are systematically upward-biased.

Martin Braml spent six months at Stanford University for an academic visit. During this time, he investigated on which basis the EU and the US select products that qualify for imposing retaliatory tariffs in the event of a trade conflict. This selection is relevant, as it could be motivated either by lobbying, or political considerations, or welfare maximization in an economic manner.

International Market Interactions, Institutions, and the Costs of Natural Disasters

J. Gröschl for the Deutsche Forschungsgemeinschaft (DFG), January 2017 to March 2021.

Natural disasters can result in severe economic shocks, with consequences 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 setups 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 an important factor in adapting to natural disasters. However, most of the empirical literature suffers from a number of problems. First, studies have usually used information on the incidence of natural disasters from databases drawn from

insurance records or the news. This introduces severe reporting and endogeneity biases, as both insurance penetration and damage caused are correlated with development. To tackle this issue, Felbermayr and Gröschl have proposed a database, *ifo GAME*, which collects information on geological and meteorological events from primary sources.

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. The research strategy follows three steps: first, we investigate how natural disasters affect international trade and production patterns. Second, we analyze losses in economic growth due to natural disasters at the local level and potential spillover effects. Third, we use Colombian firm-to-firm transaction data to identify how firms behave if they are affected by natural disasters either directly or indirectly through partner firms. Finally, we use unique international money transfers and migration corridors to identify the impact of natural disasters on the behavior of agents.

In 2017 and 2018, we created the dataset on natural disaster intensities for 1979–2014 around the globe and estimated the short-run effects of natural disasters on international trade. Results show strong heterogeneity across disaster types and country groups: while countries with high debt levels and the 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.

Currently, we are working on cleaning the Colombian firm-to-firm transaction-level data to be able to match it to our gridded geological and meteorological events database. This major data work will be ongoing in 2020. When finalized, the information on firm location around the globe will be matched to the disaster intensity data and used to analyze the behavior of firms when directly or indirectly affected by a disaster event. In addition to this data effort, we are working on cleaning the information on money transactions and collecting information on major migration channels around the globe. In 2020, we plan to look into the effects of natural disasters on money transfer flows at a fine local level in certain migration corridors.

Effects of natural disasters on international trade

ifo Center for Macroeconomics and Surveys

Research at the ifo Center for Macroeconomics and Surveys 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 9,000 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 stabilizing effects of economic policies from national, European, and international perspectives. Researchers in this area conduct ex post analyses using both macro- and microdata 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 (behavioral) 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 about 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 randomized survey experiments. In another policy-relevant project, the Center has developed the first dynamic scoring framework for modeling and analyzing 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 into national fiscal policies in EU member states is on analyzing the efficiency effects of tax and transfer systems, as well as their redistributive and stabilizing 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 EU-27 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 stabilizers. In particular, the first project ("Crisis, Fiscal Consolidation, and Automatic Stabilization") analyzes how reforms of tax-benefit systems in the period 2007–2015 affected the automatic stabilization capacity in the EU based on harmonized European microdata. Factors like unemployment benefits or income taxes can stabilize 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

ifo's tax-benefit
microsimulation
model

from those that take place after explicit government legislation (discretionary changes), as well as changes in actual incomes and behavioral responses. We find automatic stabilizers to be generally heterogeneous across countries – both in levels and in terms of policy changes over the crisis. Stabilization coefficients vary from less than 25 percent in eastern European countries to almost 60 percent in Belgium, Germany, and Denmark. We discuss the implications of our results for post-crisis recovery.

The second project (“Labor Supply and Automatic Stabilizers”) estimates the stabilizing effects of tax and transfer systems through a marginal incentives channel. We develop a random utility-discrete choice model of household behavior to analyze the incentive effects of taxes. This model is used in conjunction with and as an augmentation of the (static) tax model EUROMOD. 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 labor supply. This effect offsets part of the initial income decline, stabilizing 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 labor supply with respect to a change in the after-tax wage. We estimate a structurally discrete choice labor supply model and individual tax rates for households in the EU using the microsimulation model EUROMOD and EU-SILC household data. Our estimations show that up to 10 percent of a fall in household income is offset by an increase in labor supply. The EU average is roughly 2 percent. 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 labor supply elasticities also play a significant role.

A further study by Mathias Dolls, Clemens Fuest, Carla Krolage, Florian Neumeier, and Daniel Stöhlker (“Incentivizing Structural Reforms in Europe? A Blueprint for the European Commission’s Reform Support Programme”) assesses the European Commission’s recently proposed reform delivery tool. By providing fiscal transfers to member states, this tool strives to incentivize governments to conduct growth-enhanc-

ing 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 Globalized World.”

A joint research project by Robert Lehmann, Xenia Frei, and Felix Rösel, both of ifo Dresden, and Sebastian Langer of the 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 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. After journaling in 2019, the paper has been accepted for publication in *Kyklos*.

A current research project by Mathias Dolls and Carla Krolage analyzes the effect of financial incentives on retirement entry behavior in the context of a major recent policy reform in Germany (“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 6.4 months earlier.

In a further project, Mathias Dolls, Clemens Fuest, Carla Krolage, and Florian Neumeier examine the effects of real estate transfer taxes (RETT) on house prices using a rich micro dataset on German properties covering the period 2005–2018. The authors exploit a 2006 constitutional reform that allowed states to set their own RETT rates, leading to frequent increases in states’ tax rates in subsequent years. Their monthly event study estimates indicate a price response that

Effects of real estate transfer taxes

strongly exceeds the change in the tax burden for single transactions. In other words, twelve months after a reform, a 1 percentage point increase in the tax rate reduces property prices by on average 3.5 percent. Effects are stronger for apartments and apartment buildings than for single family houses. The authors interpret these results in the context of a theoretical model that accounts for the effects of RETT on a property's resale value. If a property is expected to be traded more frequently in the future, the decline in its price can exceed the increase in the tax burden. Moreover, larger price effects can be explained by higher bargaining power of sellers.

Analysis of the recent tax reform in the US

The research group also conducted an analysis of the recent tax reform in the United States. Dorine Boumans, Clemens Fuest, Carla Krolage, and Klaus Wohlrabe survey German businesses and worldwide survey experts regarding the effects of the tax reform. Their analysis indicates the effects on businesses' tax burden and investment choices, as well as depicting implications for regions around the world.

The research project "The German Current Account and Capital Market Imbalances in the Eurozone against the Background of German Firms' Investment and Saving Decisions: Causes and Policy Implications" is a joint work by Timo Wollmershäuser and Christian Grimme as well as Thorsten Klug and Eric Mayer at the University of Würzburg. The project is supported by the German Bundesbank. It examines the behavior 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, which was published as *ifo Working Paper* No. 280 and has since been revised, we show that financial friction, world demand, and labor supply shocks can explain around 40 percent of the variation in corporate net lending and the current account on a one year horizon.

In the project "Capital Flows in the Euro Area and TARGET2 Balances" Timo Wollmershäuser, together with Nikolay Hristov of the Deutsche Bundesbank and Oliver Hülsewig of the University of Applied Sciences Munich, looks at the consequences of the capital flow reversals in the euro area between 2008 and 2014. Like 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 in 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 accommodating 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 needed to compensate for the drying up of private funding. As the closing of these funding gaps through 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 summarized as follows. First, 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 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. In January 2020 the paper was accepted for publication in the *Journal of Banking and Finance*.

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 DSGE models and empirical time series approaches 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 microdata from business and surveys are suitable for forecasting macroeconomic time series. In addition, alternative condensation procedures for microdata 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. For these purposes, Robert Lehmann, Magnus Reif, and Timo Wollmershäuser started the internal project "IFO-CAST 2.0" to further increase the quality of the ifo-internal forecast methodology.

Projects in Detail

In the project "Nonlinear Effects of Uncertainty on Lending Conditions: Evidence from Firm-Level Data", Christian Grimme, together with Steffen Henzel of the Munich University of Applied Sciences, analyzes whether the link between uncertainty and loans is nonlinear. The question is tackled using firm-level data from the ifo Institute. 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.

The study "Uncertainty and the Cost of Bank vs. Bond Finance" by Christian Grimme was again revised in 2019. It analyzes 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 and increase the customer relationship. This reduces short-term interest rates.

The study "State-Dependent or Time-Dependent Pricing? New Evidence from a Monthly Firm-Level Survey: 1980–2017" (Christian Grimme together with Huw D. Dixon of Cardiff Business School) analyzes the relative importance of time and state dependence in the price setting of firms. The results show that both factors are important. In particular, price increases can be well explained only by the interaction of both factors. Therefore, theoretical models that explain price fluctuations should include both factors and not, as they currently do, just one of the two. The results are published as *CESifo Working Paper* No. 7842, 2019.

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's effects are analyzed by means of the unique firm-level survey data of the ifo Business Survey on expected and realized 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 paper is circulated as *CESifo Working Paper* No. 7575, 2019.

The project "The Effect of Disaggregate Information on the Expectation Formation of Firms" von Sebastian Link (together with Lukas Buchheim of 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

**New aspect
of firms' expectation
formation**

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.

Furthermore, Sebastian Link published his paper “The Harmonization of the ifo Business Survey’s Micro Data” in the *Journal of Economics and Statistics*. Every month, the ifo Business Survey (IBS) receives approximately 9,000 responses from a representative set of German firms about their current and expected economic conditions along various dimensions. Thus, the microdata of the IBS is ideally suited to study various aspects of firm behavior and expectation formation. However, methodological heterogeneities between different subsets of the IBS have prevented joint analyses of firms in all main sectors of the economy. This paper expands the scope for economic research based on the IBS by presenting a harmonization procedure that overcomes these heterogeneities and that substantially improves the possibility of merging firms to administrative data at disaggregate industry levels.

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, to forecast import growth for six advanced economies. The Import Climate is based on international 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. In 2019, the revised results of the research project were published as *ifo Working Paper 294*.

The research project “Forecasting Exports across Europe: What Are the Superior Survey Indicators?” by Robert Lehmann investigates the question of whether superior indicators to forecast export growth exist across a multitude of European countries. Based on a forecast experiment, he shows that four indicators in particular can be described as superior: the Export Climate (in the style of the ifo Institute), the Production Expectations of domestic manufacturing firms, the Industrial Confidence Indicator, and the Economic Sentiment Indicator. The manuscript was published as CESifo Working Paper 7846 in September 2019.

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 of the University of Kiel, and Maik Wolters of the University of Jena, work is done to develop a model to date business cycle turning points. 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 nonlinear factor can significantly 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 nonlinear models are used. The author finds that nonlinear 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 (together with Markus Heinrich of the University of Kiel) studies whether forecast accuracy can be improved by modeling 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.

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 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. Lastly, in 70 percent of all cases, extending the country-specific forecasting model with WES information on key trading partners increases forecasting quality. The article has been published in *Applied Economics* and the main results were also used to inform the general public by publishing them in the *ifo Schnelldienst*.

In addition, Stefan Lautenbacher, together with Rüdiger Bachmann of the University of Notre Dame, Kai Carstensen of the University of Kiel, and Martin Schneider of Stanford University, analyzes 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 of 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 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 *CESifo Working Paper* 7460 in January 2019, which was accepted for publication in the *German Economic Review* in January 2020.

PROJECTS IN INEQUALITY AND REDISTRIBUTION

The Center also investigates trends in income and wealth distribution, as well as other indicators of inclusion and equal opportunity. Using a variety of econometric techniques, the Center conducts microdata 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 analyze potential drivers of changing inequality like globalization 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 2017–2020. In the first project, we teamed up with research partners from France, Sweden, and Luxembourg to investigate the influence of unequal opportunities over the entire course of individuals’ lives. Rather than focusing on a specific stage of adulthood, this project analyzes 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 simultaneously address these questions from intergenerational mobility and equal opportunity perspectives and draw on cross-country comparisons to

Investigating the influence of unequal opportunities

Well-being is a
multidimensional
concept

identify the causal mechanisms via which social and economic advantages are transmitted from one generation to another.

In the second project, on which we are working 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 on the equality of opportunity have made little progress in this respect – a shortcoming that this research project addresses. To this end, we 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 measures developed to the data in order to assess equality of opportunity with respect to multidimensional well-being.

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 of 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 of the University of Copenhagen and Paolo Brunori of the 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 minimize the risk of arbitrary and ad hoc model selection. Second, they provide a standardized way of trading off upward and downward biases in inequality of opportunity estimations. Finally, regression trees can be graphically represented; their structure is immediately readable 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.

In a new research project, Andreas Peichl and Paul Hufe (together with Daniel Weishaar of LMU Munich) investigate the properties of conventional measures of inequality of opportunity in the context of developing countries. In particular, more restrictive data environments could lead to non-trivial biases in the context of these countries. The authors show that conventional measures of inequality of opportunity applied to “poor” data environments should be interpreted as lower bounds of the true extent of unequal opportunities. For this reason, the authors complement the lower bound estimates with upper bound estimates to illustrate the bandwidth of possible estimates and to restrict the scope for misinterpreting the point estimates of conventional point estimates.

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 of the 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, not only did groups just below the very top experience less income growth than those above them, but they also benefited less than the upper middle class located just below them 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 Guertzen of the University of Regensburg and IAB, Laura Pohlen and Holger Stichnoth of ZEW, Mannheim, and Gerard van den Berg of the 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 increase of 13 percent vis-à-vis the old steady-state value. The researchers find that effects differ strongly by labor 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.

Marc Stöckli and Paul Hufe investigate in a joint research project with researchers from the ifo Center for

Education Economics whether school investments into the quality and quantity of the teaching body exert a differential effect on students depending on their education-related genetic endowments. As such they contribute to a rapidly growing body of economic research that aims to integrate novel insights from behavioral genetics into the focus of social science research.

ECONPOL EUROPE

EconPol Europe – The European Network for Economic and Fiscal Policy Research is a unique collaboration of 14 policy-oriented university and non-university research institutions 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 unique
collaboration of
research institutions



The network 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)

- CERGE-EI (Prague, Czech Republic)
- CPB Netherlands Bureau for Economic Policy Analysis (The Hague, Netherlands)
- Instituto Universitario de Economía at the Universidad Carlos III de Madrid (Madrid, Spain)
- Institute for Advanced Studies (IHS; Vienna, Austria)
- KOF Swiss Economic Institute at ETH Zurich (Zurich, Switzerland)
- REM at the Lisbon School of Economics and Management of the Universidade de Lisboa (Lisbon, Portugal)
- 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)
- 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 more deeply in the member states. 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.

**Promoting growth,
prosperity, and social
cohesion**

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 including working papers, policy reports, policy briefs, and opinion pieces. In 2019, 19 EconPol Working Papers, 9 EconPol Policy Reports, 9 EconPol Policy Briefs, and 11 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, and tax competition in Europe.



In addition to various academic workshops, lunch seminars, and a parliamentary breakfast with members of the European Parliament, EconPol Europe organized the network's third annual conference in November 2019. The two-day conference focused on "Europe's Competitiveness and the Rise of China." The conference brought together some 150 scientists, politicians, experts from German 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 November 7,

2019 started with a speech by Carlos San Basilio (Secretary General of the Treasury and International Financing, Spanish Ministry of Economy and Business) on the future agenda for Europe's competitiveness, followed by a speech by Daniel Gros (Director, CEPS). Next came a panel discussion about the rise of China and the resulting challenges for Europe. Koen Jonkers (European Commission), Sherry Madera (Refinitiv), Luisa Santos (BusinessEurope), and Xu Zhengbin (Chinese Mission to the EU) participated in the panel. In the evening, a plenary session on Chinese competition included Stefano Schiavo (University of Trento), Andrea Ciani (Düsseldorf Institute for Competition Economics), and Koen Jonkers.

On November 8, various sessions were held on the topics of productivity growth in the European Union, labor market effects of digitalization and automation, euro area governance, 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 constitutes 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, microdata derived from ifo Business Surveys plays an important role in testing economic behavioral patterns – for example investment and employment behavior, labor 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 around the world. The regular surveys are also part of the harmonized 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 in-

dicators 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 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 also adopted in policy simulations.

To ensure that its economic forecasts are scientifically sound, the Center's models for the analysis and forecasting of the business cycle 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 according to 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 sub-sec-

70 years of the
ifo Business Survey

tors, manufacturing industry, the service sector, construction, as well as wholesale and retail trade.

The ifo Business Survey aims to capture the business-cycle component of macroeconomic developments. 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 it 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 utilization 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.

Time series from multiple sources

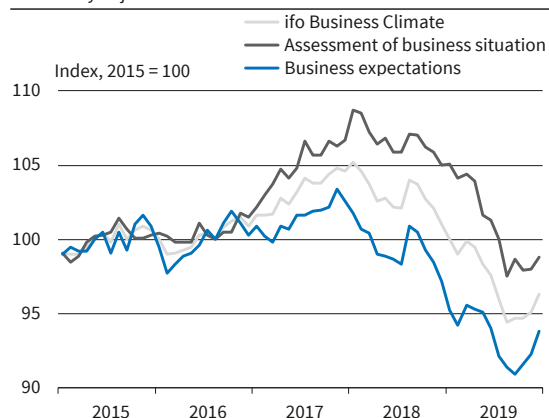
External individuals interested in the time series of the ifo Business Survey can obtain data from the ifo Institute's database service. The data offered also includes time series from other sources.

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 the ifo Business Climate for Germany, which also contains 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. Special monthly evaluations and commentaries of the ifo Business Survey are provided by the ifo Institute for Bavaria, Baden-Württemberg, North Rhine-Westphalia, and Saxony.

ifo Business Climate Germany^a
Seasonally adjusted



^a Manufacturing, service sector, trade, and construction.

Source: ifo Business Survey, December 2019

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IFO INVESTMENT SURVEY OF MANUFACTURING INDUSTRY

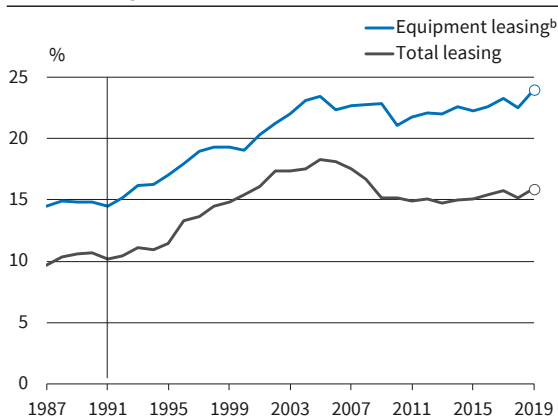
The ifo Investment Survey was the forerunner of all the German Federal Statistics Office's investment surveys. Today it supplements official ex post data with timely information on projections based on company plans. This makes the ifo Institute the only source of quantified estimates of current developments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

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 *ifo Schnelldienst* and in a comprehensive leasing report. The latter comprises the size and kind of the investment, as well as the distribution across sectors.

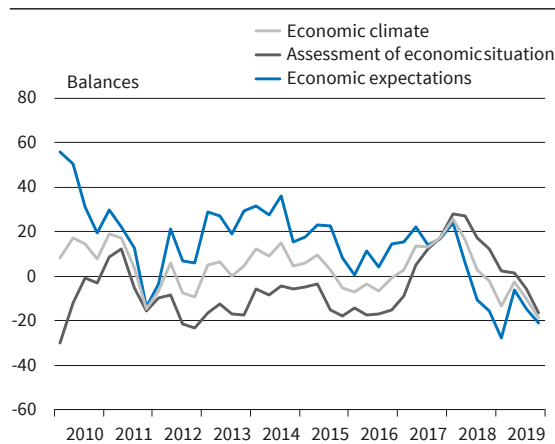
Leasing Quotas of Germany

Share of leasing in total economic investment^a



^a Excluding residential construction. New statistical concept (ESA) as of 1991.
^b Share of movable property leasing in total investment in equipment.
 Source: Federal Statistical Office; ifo Investment Survey. ©ifo Institute

ifo World Economic Climate



Source: ifo World Economic Survey (WES) IV/2019. ©ifo Institute

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 account for over 75 percent of 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 and transformation countries as accurately as possible.

In 2019, the ifo Institute also polled over 1,200 international business experts at 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 condensed form in German in *ifo Schnelldienst*. In Latin America, the ifo Institute has cooperated with Fundação Getulio Vargas/Instituto Brasileiro de Economia (FGV/IBRE) since 2007, which publishes the WES results for this region.

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 summarized 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.

Monthly replies from over 4,300 companies

DATABASE FAMILY BUSINESS FOUNDATION

The aim of the cooperation between Stiftung Familienunternehmen and the ifo Institute, which began in 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. This involves conducting a representative company survey of current and relevant issues, which enables the analysis of the economic developments of family businesses. The “Jahresmonitor der Stiftung Familienunternehmen 2019 – Wirtschaftspolitik für eine starke EU” is dedicated to the future of Europe from the point of view of German companies and the expectations of the future economic policy of the EU. Around 1,400 companies took part in the survey on which the report is based.

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 labor 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 organizations), 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 policy problems related to it. The economic implications of fiscal and monetary policy decisions are also analyzed and commented upon.

JOINT ECONOMIC FORECAST

In spring and in autumn the Center, together with the department for business cycle research of KOF Swiss Economic Institute at ETH Zurich, 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.

Quantifying the
dynamics of economic
activity

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 manufacturing industry and will reflect the 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.

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, M. Reif, 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 electricity industries.

ifo Business Survey for Bavaria

F. Leiss, K. Demmelhuber, S. Rumscheidt 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, S. Rumscheidt, for Stiftung Familienunternehmen, regular publication in *Jahresmonitor Stiftung Familienunternehmen* and on the internet.

Implications of Climate Change and Climate-Induced Disasters for Individuals, Firms, and the Insurance Sector (CLIMATE_AFFECT)

R. Lehmann in cooperation with Helmut-Schmidt-University Hamburg for the German Federal Ministry of Education and Research, November 2018 to June 2022, academic publications are planned during the term.

Model Calculations for the Fifth Sustainability Report of the German Federal Ministry of Finance

R. Lehmann, K. Gründler, M. Mosler, N. Potrafke in cooperation with the University of Bochum for the German Federal Ministry of Finance, March 2019 to August 2020, publication planned as *ifo Forschungsbericht*.

Effects of Currency Conflicts on the German and European Economy

C. Grimme, R. Šauer, T. Wollmershäuser for the German Federal Ministry for Economic Affairs and Energy, September 2019 to October 2019, publication as *ifo Forschungsbericht* 109, ifo Institute, Munich 2019.

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 helps to address various societal challenges by analyzing 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 of Economies), the Center fulfils key service tasks for academia and the general public.

DICE DATABASE AND THE JOURNAL IFO DICE REPORT

With its unique DICE database, the ifo Institute compiles information on institutional rules and regulations and makes it available to the interested public. DICE provides users one-stop-shop access to quantitative and qualitative information on different topics, 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, natural environment, infrastructure, labor market, migration, public sector, social policy, and macroeconomics.

It is closely linked to the *ifo DICE Report*. This quarterly journal analyzes 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* offers additional contributions related to the topic of the Forum, in the sections “Research Reports”, “Reform Models”, “Database”, and “News”.

CESIFO FORUM

CESifo Forum includes contributions from internationally reputable 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, migrant integration, and knowledge remittances associated with migration. A paper on self-selection of emigrants from Denmark, written together with EconPol partner VATT, was published. Another paper, coauthored with the ifo Center for Industrial Organization and New Technologies and the University of Munich, analyzes if emigrants remit knowledge back to their country of origin and is forthcoming in *Research Policy*. A paper on international spillover effects of family reunification rules received a “revise and resubmit”. The research on refugees includes a field experiment on how to foster the labor market integration of refugees – with a researcher from the University of Glasgow and one from the University of Munich. Collection of almost all data and the first analyses were completed in the DFG project “Language-Skill Investments and Migration Decisions” analyzing language learning and migration intentions. Collaboration with researchers from Uppsala University using geocoded register data from Sweden to study the effect of allocating refugees to individual neighborhoods continued. One paper on the implications of EU enlargement for firm productivity in sending countries is being revised.

In the **second research area of migration and political economy**, a paper coauthored with CEPII that studies the role played by immigration in the electoral success of extreme parties in French presidential elections for the years 1988–2017 was published.

The **third research area of institutions and financial intermediaries** studies the impact of institutional regulations on financial intermediation. One contribution analyzes whether there is a gender effect on credit conditions and how this effect is related to different perceptions of gender roles. Another paper, which shows how suitable different survey questions are as an approximation for corporate credit access and the role of institutional arrangements for credit access, was published. Furthermore, it explained how a firm’s perception of the general willingness of banks to lend depends on its individual credit market experience. This research result was used to reformulate the question of access to credit in the ifo business surveys.

Labor market integration of refugees

In the **fourth research area on institutions and society**, the team studies how institutions and society interact. A paper on how political instability affects households' investment behavior, especially investment in health and education, was published in January 2019 in *World Development*. A working paper on target-specific beliefs and redistributive preferences was published, offering insights into both perceived equality of opportunity and its political consequences. 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 2019

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.

There are significant historical and cultural differences in the way private tax information is handled internationally. Countries such as Germany and the US, where data privacy plays a central role in the tax law, are in stark contrast to the Scandinavian model, which favors a rather open approach to information. At the same time, transparency plays an important role when it comes to the exchange of tax-relevant information between countries. This exchange helps national tax authorities respond to tax evasion that arises in a globalized world. The study analyzes tax secrecy in a global context, focusing on the public access to tax information and the exchange of information between countries.

DICE: Database for Institutional Comparisons of Economies

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

In the course of the DICE relaunch, the needs of the users were analyzed in detail. Based on these findings, a concept for the content and technical redesign of the database was developed. With this concept, the user-friendliness of the DICE database was improved and numerous features were introduced, such as the possibility of graphical editing and a sign-in function. In addition, DICE's flexible database structure enables users to combine data and create their own data sets.



ifo DICE Report

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

In 2019, the “Forum” section of the *ifo DICE Report* discussed the following topics: deposit insurance, fiscal rules for Europe, the 30-year anniversary of the fall of the iron curtain, and innovation policy. The “Research Reports” and “Reform Models” rubrics are not thematically defined, but again, they always cover country comparisons of the organization 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 ifo homepage.

CESifo Forum

C.W. Nam.

In 2019 the “Focus” section of *CESifo Forum* addressed the following topics: the US-China trade war, the EU-Japan Economic Partnership Agreement, urban challenges in Europe, and economic sanctions. *CESifo Forum* articles can be downloaded from the CESifo homepage.



Current Projects

Language-Skill Investments and Migration Decisions

P. Poutvaara, T. Nikolka, M. Huber in cooperation with ifo research professor S. Übelmesser, 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 language learning and migration intentions, as well as motives for language learning and migration intentions. A survey of university students was completed in Czechia, India, Italy, Mexico, the Netherlands, and Spain. Together, this survey and an earlier survey conducted in Goethe Institutes shed light on language learning and migration decisions. They also highlight the role played by the labor 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 analyzes the role of internationally applicable qualifications compared to country-specific ones for migration (intentions), and the fourth studies the decisions to invest 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.

Motives of language learning



International Migration in Europe and Central Asia (ECA)

T. Nikolka, P. Poutvaara for the World Bank, November 2018 to June 2020.

The ongoing project for the World Bank will deliver four papers. The first one analyzes the welfare effects of migration in Europe and Central Asia using a computational model. The second paper focuses on self-selection of refugees and irregular migrants who arrived in Europe or Turkey in or after 2015. The third and the fourth paper summarize insights related to language learning and migration intentions.

Sustainable Finance

C. Fuest, C. Hainz, T. Stitteneder for the Chamber of Commerce and Industry for Munich and Upper Bavaria, December 2019 to February 2020.

The study is being carried out within the framework agreement for the preparation of economic studies with the Chamber of Commerce and Industry for Munich and Upper Bavaria. This study discusses the extent to which the measures proposed in the EU Action Plan Sustainable Finance are suitable for establishing a sustainable financial sector. Since the financial sector's orientation towards sustainability cannot be an end in itself, the impact of the measures proposed in the EU Action Plan on companies is of great importance. Therefore, this project also discusses the possible effects of the EU action plan on SME financing.

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

M. Valeyathepillay, ongoing doctoral project.

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

In a second subproject, Swedish geocoded data and electoral data are used to analyze 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 analyze the effects of elections on educational attainment and the labor market integration of refugees and their children.

Essays on Financial Education, Household Finance, and Financial Intermediation

S. Reiter, ongoing doctoral project.

In a first subproject, microdata from the Austrian National Bank (OeNB Euro Survey) were used to investigate the role of home ownership in terms of access to credit in Central, Eastern and Southeastern Europe.

These research results, which were developed in cooperation with C. Hainz, ifo Institute, E. Beckmann, OeNB, and W. Pyle, Middlebury College, have already been published.

The other two subprojects are funded by the Think Forward Initiative (TFI) and also use data from the OeNB Euro Survey. The second subproject deals with the willingness of a person to stand up for the liabilities of a third party by assuming a guarantee: How well do people understand the concept of a guarantee and the legal consequences of it? Does the willingness to guarantee collateral depend on financial knowledge about guarantees?

The third subproject investigates whether there are network effects when issuing guarantees: Are people who rely on guarantors to secure their loans also those who act as guarantors themselves, and vice versa? What role do social norms play here?

Emigration Choices over the Skill Distribution

B. Rude, ongoing doctoral project.

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

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

P. Poutvaara, H. Rainer, L. Wößmann, M. Drometer, Y. Giesing, T. Nikolka, M. Valeyathepillay, 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 also providing a forum for migration research beyond the Institute. In 2019, CEMIR organized a series of lunchtime seminars to provide ifo postdoctoral and doctoral students and external guests the opportunity to present their latest research. It also organized a junior economist workshop in July. CEMIR continues to foster collaboration within the Institute and with external researchers. Till Nikolka collaborated with researchers from Uppsala University on a project analyzing the spillover effects of national immigration policies to a third country. Yvonne Giesing published an article about a field experiment to study

the labor market integration of refugees together with Michele Battisti (former ifo Center for International Economics, now University of Glasgow) and Nadzeya Laurentsyeva (CEPS and LMU Munich). CEMIR researchers contributed to the migration debate at various conferences and events and in the media.

DICE Database for Institutional Comparisons of Economies and ifo DICE Report

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 visualization and a sign-in function. In addition to offering an optimized user experience thanks to a modern interface and extensive features, DICE has an impressive 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.

The *ifo DICE Report* provides comparative analyses of institutions, regulations, and economic policy approaches across countries. It combines cutting-edge research with current economic policy issues and provides input for the DICE database.

CESifo Forum

C.W. Nam.

Looking forward, the Center will continue to publish the *CESifo Forum* journal in 2020. Apart from the crucial issues related to 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.

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; 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 Labor and Demographic Economics. The research conducted in these centers analyzes migration and integration from the different perspectives of labor economics, international economics, public economics, and education economics. CEMIR’s research helps to answer the question of how recipient countries’ welfare state and labor 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 analyzes 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.



Center of Excellence
for Migration and Integration Research

As in previous years, CEMIR organized a junior economist workshop and a lunchtime seminar series, at which ifo researchers and external guests presented their work.

Pooling research
expertise

In CEMIR, ifo center directors Panu Poutvaara, Helmut Rainer, and Ludger Wößmann worked together in 2019 along with ifo researchers Marcus Drometer, Yvonne Giesing, Till Nikolka, Britta Rude, and Madhinee Valeyatheepillay of the ifo Center for International Institutional Comparisons and Migration Research, Marc Piopiunik of the ifo Center for the Economics of Education, and Thomas Fackler of the ifo Center for Industrial Organization and New Technologies. They cooperated with a range of external researchers, including the ifo research professors George Borjas of Harvard University, Giovanni Peri of the University of California, Davis, and Silke Übelmesser of the University of Jena, as well as the researchers Ilpo Kauppinen of the VATT Institute for Economic Research, Romuald Méango of the Munich Center for the Economics of Ageing, Matz Dahlberg of Uppsala University, Martin David Munk of Aalborg University, Anthony Edo of CEPII, Nadzeya Laurentsyeva of CEPS, Michele Battisti of the University of Glasgow, Cevat Giray Aksoy of the European Bank for Reconstruction and Development and Research, and Alicia Adsera of Princeton University.

Research Group Taxation and Fiscal Policy

The Taxation and Fiscal Policy research group headed by Clemens Fuest was created in October 2016. It currently consists of two PhD students, one postdoctoral researcher, and one senior economist (50 percent), who carry out research projects and engage in policy consulting with a focus on 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 Taxation and Fiscal Policy research group therefore pays particular attention to the following issues.

INTERNATIONAL TAXATION

Growing global economic integration along with the further liberalization 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 analyzing tax competition and tax avoidance as well as proposals for tax coordination, tax harmonization, and 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 group also analyzes the regional distribution of income and its determinants in Germany. In this context, it examines issues such as the impact of globalization 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

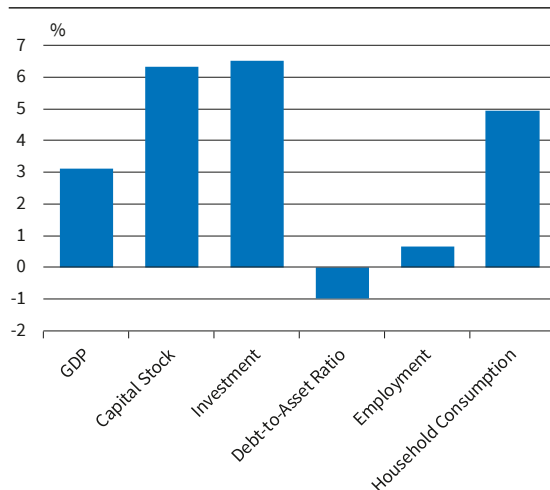
of sovereigns. The resulting sovereign debt crisis has constrained fiscal capacity substantially and triggered heated debates about the future institutional setup of the eurozone. The research group studies the development of fiscal policy in the eurozone and beyond and contributes to the discussion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

Projects Completed in 2019

The Economic and Fiscal Consequences of a Capital Income Tax Reduction in Sweden

C. Fuest, F. Neumeier, D. Stöhlker in cooperation with M. Stimmelmayer, ETH Zurich, for Svenskt Näringsliv (The Confederation of Swedish Enterprises), December 2018 to May 2019.

Long-Run Economic Consequences of a Capital Income Tax Reduction



Notes: The figure shows the estimated long-run effects of a decrease in the capital income tax rate on selected macroeconomic aggregates.

Source: Calculations of the ifo Institute.

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In this study, the authors analyzed the long-term consequences of a capital income tax reduction on economic activity in Sweden. Using a dynamic simulation model that takes the behavioral responses of economic agents and the interdependencies between the different sectors of the economy into account, they estimated the effect of a 10 percentage point cut in the capital income tax rate on important macroeconomic

A dynamic simulation model

aggregates, including GDP, investment, and employment, as well as tax revenues. Their results suggest that a reduction of the capital income tax rate would boost economic activity in Sweden: the capital income tax cut would lead to an increase in GDP by about 3.1 percent in the long run. The main driver behind this rise in GDP is an increase in private investment by roughly 6.5 percent. In addition, employment rises modestly by about 0.7 percent.

With regard to the fiscal consequences, the authors found that the fiscal costs associated with a capital income tax reduction tend to be low. Due to the boost in economic activity, the decrease in revenues from the capital income tax is partly offset by an increase in revenues from other taxes, especially the labor income tax and the value-added tax. Overall, the drop in total tax revenues amounts to roughly 0.2 percent.

Evaluation of Tax Concessions

C. Fuest, L. Immel, F. Neumeier in cooperation with the ifo Center for Public Finance and Political Economy, FiFo Institute, Köln, ZEW Mannheim, and Fraunhofer FIT for the German Federal Ministry of Finance, June 2017 to October 2019, publication as *Fifo-Berichte*, Cologne 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. The aim of this project therefore was to evaluate 33 tax concessions with respect to several factors including their effectiveness, efficiency, transparency, and sustainability as well as to quantify the associated losses in tax revenues.

From these 33 concessions, six measures received an overall rating of “good”. These benefits accounted for a total volume of EUR 2.7 billion in 2018. Seventeen tax benefits accounting for a total volume of EUR 2.9 billion were rated as “sufficient”. This indicates that the benefit in question “passed” the evaluation but that there is significant room for improvement. Ten tax benefits accounting for a total volume of EUR 1.8 billion received an overall rating of “weak”. These tax benefits were found to fall far short of their expected objectives and therefore to require urgent fixing: such measures must be redesigned completely or else discontinued. The evaluation findings and concomitant recommendations are pooled in a compendium report covering all 33 tax benefits.

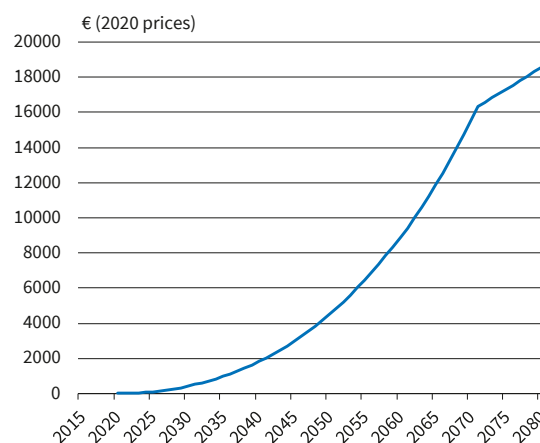
Compendium report
covering all 33 tax
benefits

The Concept of a German Citizens' Fund

C. Fuest, V. Meier in cooperation with the ifo Center for International Institutional Comparisons and Migration Research and M. Werding, University of Bochum, February 2019 to May 2019, publication as *ifo Studie*, ifo Institute, Munich 2019.

The world economy faces a period of low interest rates, which has led to favorable debt conditions for Germany. The debt ratio is falling below the threshold stated in the Maastricht treaty of 60 percent of GDP in 2019. The specific situation that international investors consider Germany as a safe haven within the eurozone is expected to continue provided that the German economy keeps growing and that fiscal policy remains solid. At the same time, German investors find it increasingly difficult to provide for their old age in view of low interest rates. Therefore, the government may use the interest spread by issuing debt and investing the amounts on the international capital market. This exploits the situation that stocks and real estate still generate substantial return, though not in every year due to fluctuations of market prices.

Lump-Sum Benefits upon Retirement



Source: SIM.16.

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The project analyzed a model of the German citizens' fund, which issues debt and invests in stocks, real estate, and bonds. Its surplus is used to finance a lump sum of each currently young individual when he or she reaches the future statutory retirement age of 67. Simulations with different scenarios regarding assumptions of yield differentials show that debt-financed investment at an annual rate of 0.5 percent of GDP and

average differential of returns of 2 percentage points yield a lump sum per capita at age 67 of EUR 16,000 in 2020 prices after participation throughout the working age. Should the interest differential lie at 3 percentage points, that lump sum would rise to around EUR 30,000.

All variations show that substantial wealth effects, specifically improvements in providing for old age, can be achieved while at the same time respecting German and European debt rules. It is noticeable that this is attained without additional contributions. Administration of the citizens' fund should not allow for political interventions and might be allocated to the Bundesbank.

How Will Brexit Affect Tax Competition and Tax Harmonization? The Role of Discriminatory Taxation

C. Fuest in cooperation with S. Sultan, University of Munich, internal project, publication as *ifo Working Paper* No. 248, 2018.

In this paper, the authors have used a stylized model of tax competition to study the implications of a regime change where one of three countries gives up a common tax policy norm, the norm of levying uniform tax rates on all sectors in the economy. It turns out that this regime change increases tax policy heterogeneity among the remaining countries, which continue to comply with the norm. They also show that the regime change discourages tax harmonization among the remaining countries. If applied to the case of Brexit, these results question the widely held view that the remaining EU countries will be more likely to take steps towards enhanced corporate tax harmonization.

Political Economy of Redistribution between Modern and Traditional Families

V. Meier in cooperation with M. Rablen, University of Sheffield, internal project, April 2018 to March 2019, publication as *CESifo Working Paper* No. 7658, 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.

Current Projects

Analysis of the Distribution of Income and Wealth in Germany II.

L. Immel, F. Neumeier in cooperation with the ifo Center for Macroeconomics and Surveys, the ifo Center for Labor and Demographic Economics, the IAW and M. Biewen, University of Tübingen, for the German Federal Ministry of Labour and Social Affairs, January 2019 – ongoing.

The five previous "poverty and wealth reports" (*Armut- und Reichtumsberichte*) that were presented by the German government have contributed substantially to the understanding of social mobility and the allocation of financial resources in Germany.

Building on the existing framework, in preparation for the sixth edition of the poverty and wealth report, it is essential to improve and enhance the current methodology. Important requirements concern, e.g., the temporal consistency with preparatory studies for previous editions of the report as well as with other preparatory studies for the upcoming edition. This in turn requires highly standardized data preparation and cleaning. In contrast to previous editions, the upcoming poverty and wealth report focuses more strongly on analyzing causal relationships. In scope of this, more focus is put on investigating the formation of the primary distribution than before. An additional focus lies on analyzing the income distribution and investigating driving forces. Another novelty concerns the distribution of tasks between the participating preparatory studies, which is why this study also incorporates aspects regarding social mobility in the context of income mobility.

The Development of Inequality and Poverty in Germany and France over the Last 25 Years

C. Fuest, L. Immel, F. Neumeier in cooperation with the ifo Center for Macroeconomics and Surveys and the Institut d'Economie Publique for the German Federal Ministry of Education and Research, January 2019 to December 2021.

The distribution of income and wealth has developed differently in Germany and France over the past 25 years. This project thus aims to give a detailed country comparison between Germany and France,

Understanding social mobility

which can serve as a basis for the scientific and public debate. In the course of the project, the development of the distribution of income and wealth in both countries will be systematically documented. Subsequently, different aspects of inequality will be examined more thoroughly. For example, we will analyze the effects of reforms of the tax and transfer system as well as labor market reforms on the distribution of income and wealth in Germany and France. Special attention will also be paid to inequality developments at the regional level. Furthermore, we will focus on equality of opportunity and investigate to what extent the prospects of success in Germany and France are determined by factors beyond individual influence (gender, family background, etc.).

Finally, the results from the individual analyses will be combined, differences and similarities between Germany and France will be worked out, and evidence-based recommendations for action will be derived.

National Tax Revenue Effects of an International Reallocation of Taxing Rights

C. Fuest, F. Neumeier, D. Stöhlker in cooperation with F. Hugger, University of Munich, for the German Federal Ministry of Finance, September 2019 to January 2020.

The increasing importance of multinational companies and the advancing digitization of economic activities poses growing challenges to the system of international corporate taxation. For this reason, the member states of the OECD are currently debating different proposals to reform the international corporate tax system. These proposals aim to adapt the tax system to the growing importance of digital business models in order to reduce the associated opportunities for profit shifting.

The aim of this project is to quantify the effects of possible legal changes to the corporate tax system on the national income tax revenue in Germany. In a first step, the contribution of cross-border transactions between affiliated companies to the income tax revenue in Germany will be determined. In a second step, the fiscal effects of a full allocation of such revenues to the market state will be calculated. Subsequently, the fiscal effects of three different reform proposals for the redistribution of taxation rights will be quantified. Based on the results of these analyses, recommendations for policy action will be derived.

Regional Inequality and Extremist Voting in Germany

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

Over the past decades, many industrialized 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 fueled resentments against mainstream political parties as well as 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 unequal economic resources are distributed, the greater the appeal of extremist and populist views. The extant empirical evidence suggests that inequality and political polarization 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 polarization 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.

Tax Cuts Starve the Beast! Evidence from Germany

C. Fuest, F. Neumeier, D. Stöhlker, internal project, October 2016 – ongoing, publication as *CESifo Working Paper* No. 8009, 2019.

In the context of this research project we evaluate how fiscal policy reacts to exogenous changes in the government's fiscal situation. Utilizing panel data from the German states covering the period from 1992–2011, 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 fields that 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 or-

der 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 in the same direction after 2–3 years, specifically with respect to spending on governmental administration and health expenditures.

The panel data set 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 stabilization and adjustment process in response to fiscal shocks because each member of the coalition seeks to transfer the political costs of the adjustment to the others. 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.

Who Bears the Burden of Real Estate Transfer Taxes? Evidence from the German Housing Market

C. Fuest, F. Neumeier, M. Dolls, C. Krolage, internal project, February 2019 – ongoing, publication as *ifo Working Paper* No. 308, 2019.

In this project, the authors examine the effects of the real estate transfer taxes (RETT) on house prices using a rich micro dataset on German properties covering the period 2005–2018. The authors exploit a 2006 constitutional reform that allowed states to set their own RETT rates, leading to frequent increases in states’ tax rates in subsequent years. Their monthly event study estimates indicate a price response that strongly exceeds the change in the tax burden for single transactions, i.e., 12 months after a reform, a 1 percentage point increase in the tax rate reduces property prices by on average 3.5 percent. Effects are stronger for apartments and apartment buildings than for single family houses. The authors interpret these results in the context of a theoretical model that accounts for the effects of RETT on a property’s resale value. If a property is expected

to be traded more frequently in the future, the decline in its price can exceed the increase in the tax burden. Moreover, larger price effects can be explained by higher bargaining power of sellers.

How Does Inequality Affect Local Fiscal Policy in Germany?

L. Immel, F. Neumeier in cooperation with S. Sultan, University of Munich, internal project, December 2018 – ongoing.

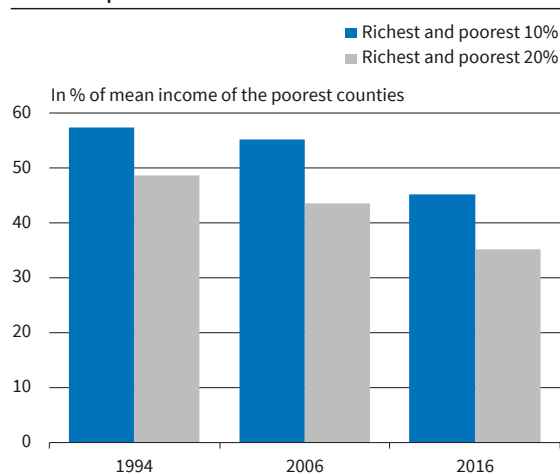
This paper studies the effect of income inequality on local fiscal policy in Germany over the time period 1992–2014. The authors combine administrative panel data on the universe of German municipalities with income inequality data from the German Microcensus in order to analyze the effect of different inequality measures on both municipalities’ expenditures and their tax policy using an instrumental variables approach.

Economic and Demographic Differences and the Development of the Gap between Urban and Rural as well as Western and Eastern Regions – Regional Divergences in Germany

C. Fuest, L. Immel, internal project, August 2019 – ongoing, publication in *ifo Schnelldienst* 72(16), 2019.

Local fiscal policy

Income Gaps between the Richest and Poorest Counties



Source: German Microcensus; authors’ calculations.

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Regional differences are becoming increasingly important in the public debate and demands for political measures to contain regional differences are gaining support. For the design of such measures, it is import-

ant to correctly identify the nature of the divergences. The analysis of the different economic and demographic developments in German regions shows that the inequality of disposable household incomes between regions has declined in recent decades.

This applies both to the income gap between urban and rural areas as well as to the gap between western and eastern German regions. At the same time, however, there is an increasing demographic urban-rural gap. The population in rural regions is declining and ageing faster than the population in the city. This is particularly true for rural regions in eastern Germany.

Quality of Local Public Goods Provision and Electoral Support

D. Stöhlker, internal project, January 2019 – ongoing.

Do voters value the quality of local public goods, such as whether pavements are clean, whether benches in the park need repair, or whether local roads are in good shape? Using almost 600,000 geo-located complaints that were posted on the complaints platform FixMyStreet.com between May 2007 and 2015, I compute quality indicators for all 8,500 local wards that comprise the whole of England. The results provide compelling evidence for both a strong rewarding and a punishment effect in local council elections: in wards with positive quality indicators, such as a large fraction of complaints that are solved within 30 days, the incumbent party has statistically and economically significantly higher chances of being reelected. On the contrary, if the local area features a large share of complaints that are solved only after twelve months or never, the probability that the incumbent party is voted out of office is increased by up to 9 percentage points.

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 140,500 bibliographical units, some 270 periodicals, and 30 statistical reports, the ifo library is one of the largest libraries for economics in southern Germany.

In addition to the core tasks of a scientific library, the central task of the library is the documentation of the Institute publications and all other publications of the employees.

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

The ifo Institute's library is a member of the library association of the northern German Länder, GBV. The

central office of the Common Library Network (VZG) is the service center for the libraries of the GBV; it has concluded a cooperation agreement with the Library Service Centre of Baden-Württemberg (BSZ), the technical operator for the Southwest German Library Network (SWB), under the name K10plus. BSZ and VZG have operated a joint database with over 200 million records of printed and digital media since March 25, 2019.

K10plus is thus based on the library data of the majority of German state universities and colleges from ten federal states, the Prussian Cultural Heritage Foundation, and renowned research institutions such as the Leibniz Institutes, Helmholtz Centers, Max Planck Institutes, etc.

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

Broad network of libraries and research institutions

Communications

Disseminating research findings

Research at the ifo Institute combines academic excellence with economic policy relevance. ifo's activities in the field of information and services provide important data for researchers, policy advisors, and the public. Making the findings from the research areas accessible to as many stakeholders as possible is the task of the Communications department. The department's employees are responsible for communicating the ifo Institute's content and its public image. They create content for the ifo website, oversee social media channels, maintain contacts with the press, produce the Institute's publications, and organize Institute-wide events.

Dr. Cornelia Geißler took over as Head of Communications in January 2019.

In 2019, a strategy was developed for the Communications department for the first time, based on the ifo Institute's overall strategy (ifo 2025). For the purposes of this strategy, the department has been even more closely interlinked with the Institute's scientific activities. The cross-divisional central topics of research defined in the overall strategy also serve as the strategic guideposts for communications work. In implementing the strategy, the ifo Institute pursues an integrated approach: in a central planning process, consideration is given to how these topics can be linked to the political agenda and then disseminated at the appropriate time via suitable formats and channels; for example, as topic dossiers on the website, through the press, in ifo Institute publications, and in the content design of events. The strategy's content objective is to raise the ifo Institute's profile by communicating the entire spectrum of its central topics of research – not just the economic topics for which it is already known. Efforts in this area also aim to deliberately expand the circle of experts who speak in public on the ifo Institute's various topics. Regarding channels, digital options are moving to center stage, as they allow for more agile communication and take into account the changing user habits of many (especially younger) stakeholders.

WEBSITE RELAUNCH

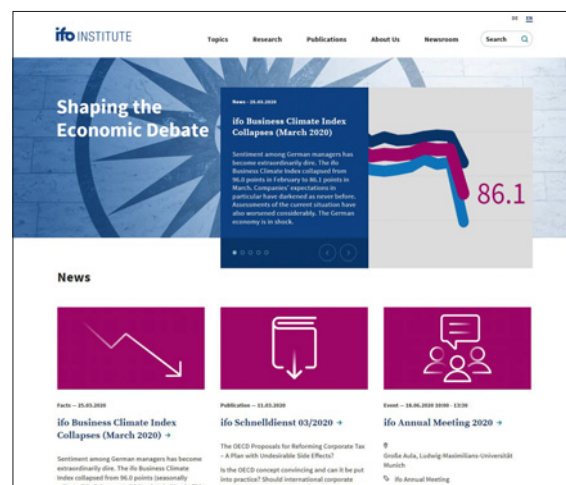
In 2019, the most important milestones were the relaunch of the website and the splitting of the CESifo Group into two separate websites: www.ifo.de and www.CESifo.org. The Center for Economic Studies (CES), meanwhile, moved to Ludwig-Maximilians-Universität

(LMU – <https://www.en.ces.econ.uni-muenchen.de>). The aim of the relaunch was to make the people at ifo more visible, to make ifo more visually appealing as a premium brand, to serve the different needs of our various stakeholders through clear user guidance, and to duly prepare and present our topics.

In the years prior to the relaunch, ifo held workshops and partnered with external agencies to overhaul the website's content and structure, develop the design, and define a new technical environment. While operating on an ambitious schedule, the teams implemented basic functionalities and adopted essential content. In May 2019, the ifo Institute's new website went live. The Institute plans to continuously develop it, focusing on new functionalities, improved visual presentation, and enhanced technical performance.

Through its structured and visually appealing design, the ifo home page communicates the Institute's claim of "Shaping the Economic Debate." Research results are bundled into six topic dossiers and disseminated via other topics to lay a foundation for a fact-based debate on current economic issues.

Page elements such as quotes and video interviews increase the visibility of the ifo experts. The Newsroom brings together the press, social media, and video communication channels. The ifo Media Center has been repositioned and now contains only its own video content, e.g., expert interviews and live streams, which can be viewed there directly. Recordings of major events are posted afterward to be viewed on demand.



www.ifo.de: ifo home page

SOCIAL MEDIA ACTIVITIES

The ifo Institute is active on selected social media channels. On its Twitter account (@ifo_Institut), the Institute disseminates findings in German. With over 10,000 followers, the Institute reaches a large number of stakeholders. The CESifo account (@CESifoGroup) addresses almost 5,000 English-speaking followers. Additional accounts are operated by the ifo Center for the Economics of Education (@ifo_Bildung and @ifo_education), as these allow it to serve its target group of those interested in education economics topics in line with their needs.

Networking, interaction, and community-building on ifo topics take place primarily via personal accounts. ifo President Clemens Fuest, department head Andreas Peichl, doctoral students, postdocs, and former ifo President Hans-Werner Sinn all have personal Twitter accounts in which they tweet about current research findings (their own or those of key external researchers) or about policy recommendations. Their activities here bring them into direct dialogue with other Twitter users.

According to the blog Makronom, in 2019 the ifo Institute ranked third among German-language #Econ-Twitter accounts. ifo President Fuest took first place among economists. Since 2019, this evaluation has also been included in the economist ranking conducted by *Frankfurter Allgemeine Zeitung* (FAZ) newspaper. This development shows the increasing importance of digital channels for the transfer of scientific knowledge to the public.

Thus far, the ifo Institute has used XING and LinkedIn primarily to advertise job opportunities. Fuest has been a LinkedIn Influencer since fall 2019, which lends him even greater visibility for stakeholders in the business world. The platform is also suitable as a place to re-feature articles that have already been published. In addition, ifo produces a monthly interview on the business climate exclusively for LinkedIn.

Select photos and videos will continue to be available on Flickr and YouTube.

PRESS RELATIONS

The Press Office is responsible for ensuring that the results produced by ifo Institute research are communicated in a way that is understandable to the media

and the general public. In 2019, the ifo Institute issued around 220 press releases on research findings, current survey results, economic policy statements, new publications, and events. The Press Office sees itself primarily as a service provider for interested journalists. It arranges interviews with people from within the Institute, organizes press conferences, and answers inquiries. It also provides the general public with information and materials.

Such continuous and dedicated press relations work helps to ensure that the ifo Institute has a strong presence in the media. In 2019, the ifo Institute was even able to expand its leading position as the most frequently cited economic research institute compared to its competitors. This achievement was due in no small part to the monthly publication of the Business Climate Index, the ifo Export Expectations, the ifo Employment Barometer, and especially the ifo Institute's economic policy statements and the ifo forecasts on economic development.

Clemens Fuest, the President of the ifo Institute, also played a large role in 2019 regarding the ifo Institute's enormous media presence. Since taking office in the second quarter of 2016, Fuest has become Germany's most-quoted economist. In 2019, he was able to increase his lead over the person holding second place. With numerous interviews and articles for national print media, television, and radio, the ifo President is constantly providing stimulus for the economic policy debate. He comments on current economic policy issues in his regular column for *WirtschaftsWoche* magazine, has articles printed in important national daily newspapers worldwide, and is in demand throughout Europe as an interview partner for radio, television, and daily papers. In 2019, Fuest drew particular attention with his comments on industrial policy proposals, a supplement to old-age provision in the form of a citizens' fund, international corporate taxation, populism, an EU-wide minimum wage, European public goods, and the debt brake.

Of the other topics that the ifo economists highlighted in numerous interviews, their statements on short-time work and the situation in industry are particularly noteworthy. Other statements that met with great interest in 2019 were those by Andreas Peichl, Director of the ifo Center for Macroeconomics and Surveys, on inequality and equal opportunities, as well as those by

Germany's
most-quoted
economist

Niklas Potrafke, Director of the ifo Center for Public Finance and Political Economy, on the subjects of redistribution, public finances, and the public debt burden. Overall, ifo published some 60 interviews and 70 articles in national print media and roughly 200 radio and television interviews in 2019.

Thanks to the television studio at the ifo Institute, which was first set up in August 2018, the number of live interviews grew significantly in 2019. The studio also makes the ifo Institute unique among economic research institutes.

Relationship with the media

In the fourth quarter of 2017, ifo began sending out press releases in French to increase its reach in French-speaking areas. The mailing list includes some 600 franco-phone journalists and is being continuously expanded.

Live streams of events are regularly embedded on media websites. Besides the ifo Media Center, they can be accessed on the websites of *Frankfurter Allgemeine Zeitung*, *Handelsblatt*, *WirtschaftsWoche*, and other media outlets. In addition, interviews with lecturers from the Munich Seminars are conducted regularly and posted in the Media Center and on YouTube. The interview with Professor Sinn on the climate crisis achieved the greatest reach, with a viewer count of 83,000.

The ifo Hands-On High-Quality Journalism Days series took place in January 2019. About 15 young journalists from the German School of Journalism and four editors from Bavarian Broadcasting took part. The series aims to transmit economic and journalistic expertise with an emphasis on practical aspects, as well as to improve participants' understanding of economic interrelationships. Leading economists from all ifo departments presented their work and research results, and typical errors in economic reporting were illustrated by means of real-life examples.

EVENTS

The Communications department is responsible for organizing and holding Institute-wide events, presenting the Institute at external meetings and conferences such as the annual conference of the German Economic Association, and looking after visitor groups. The public events are usually broadcast live on the internet and then posted in the ifo Institute's Media Center to include stakeholders who are unable to attend.

For several years now, the ifo Institute has maintained an in-depth and direct exchange with the members of the German Bundestag. Two "Parliamentary Breakfasts" were held in 2019 at the Bavarian Representation in Berlin, to which members of selected parliamentary committees were invited. At the March breakfast, Clemens Fuest, Marcel Thum, and Joachim Ragnitz joined the members of parliament in discussing current challenges in economic and European policy with a focus on ifo's proposal for reforming basic social security (Hartz IV). In October, Karen Pittel presented the Flex-cap model to further the climate policy debate, while Fuest presented the citizens' fund concept.

On June 6, 2019, the ifo Institute held its 70th Annual Meeting at Ludwig-Maximilians-Universität (LMU) in Munich. The theme of the Annual Meeting was "70th Anniversary of the Social Market Economy – What Will Be the Future of Our Economic Order?"

ifo President Fuest spoke about the significance of the social market economy as an economic and social model. The core goal of this form of economy – to combine prosperity and social equality – enjoys broad consensus in Germany. He also named future challenges: promoting growth in an aging and shrinking population; safeguarding competition in an economy dominated by digital platforms and network effects; protecting the environment; and looking out for Germany's international interests as its economic importance in the world declines.



Clemens Fuest, President of the ifo Institute

Annegret Kramp-Karrenbauer, Chairwoman of Germany's CDU party, said in her keynote speech that the social market economy was the right answer to the disruption that followed the Second World War. Now, 70 years later, the social market economy is still the right answer to today's social challenges.

Panelists included Ralf Stegner, Deputy Leader of the SPD, Hans J. Langer, CEO and Chairman of the EOS GROUP, as well as Oliver Falck and Karen Pittel, both from the ifo Institute. They discussed challenges for the social market economy with a particular emphasis on climate change, digitalization, and social inclusion.

Pictures and video from the event are available in the ifo Media Center (<https://www.ifo.de/en/node/42399>).



Annegret Kramp-Karrenbauer, keynote speaker at the ifo Annual Meeting 2019

At the Annual Meeting in the afternoon, Clemens Fuest reported on the Institute's activities for the year 2018. The financial statements for the year ending December 31, 2018, which were presented by ifo Executive Board member Dr. Stephanie Dittmer, were unanimously adopted and the actions of the Executive Board unanimously approved. Following the election of the Board of Trustees, the Annual Meeting closed with the presentation of the award from the Society for the Promotion of Economic Research (Friends of the ifo Institute) e.V. A detailed report of the award ceremony can be found in the Personnel Development section and in *ifo Schnell-dienst* 72(11), 2019.

On November 6, 2019, the ifo Institute held the 19th ifo Industry Colloquium in cooperation with the Chamber of Commerce and Industry for Munich and Upper Bavaria. The event is sponsored by the Bavarian State Ministry of Economic Affairs, Regional De-

velopment, and Energy. The colloquium serves as a platform for debate on current developments from an industry-specific perspective. In its four sector forums – Industry, Trade, Construction, and the Service Sector – experts from companies, associations, politics, and research discuss current industry developments, trends, and challenges. Detailed reports on the event are available in the Industrial Economics and New Technologies section and in *ifo Schnell-dienst* 73(1), 2020.

TRAINING COURSES FOR BUSINESS EDUCATORS

With its *ifo Klassenzimmer* newsletter, the ifo Institute provides teachers with current information grouped by topic. It contains opinion pieces by ifo experts and research articles on a specific topic and supplements these with data and editable graphics. Another special perk ifo offers teachers is a protected area on its website, where they can access all the newsletter content and where existing data is regularly updated.

The ifo Institute views teacher training and continuing education as a means of keeping business educators up to speed with firsthand information on current research and debates. To this end, it launched the ifo Hands-On Modern Economics Teaching Days training series in 2017 and held the event again in 2019. The series is recognized by the Dillingen Academy for Teacher Training and Personnel Management (ALP), 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 (ZöBIS) 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 (wpv).

Another ifo Institute training initiative focuses on the practical implementation in classrooms of economic policy research results and scientific methodology. A two-pronged cooperation agreement with ALP has been in place since 2018. It governs the provision of ifo instructors for the training program in Dillingen as well as the organization and implementation of joint training events. The ifo Institute provides the specialists, while ALP provides the facilities and organizes the events. Here, the transfer of knowledge to students is paramount: small groups rework each lecture to make it suitable as teaching material, and the results are pre-

**Two-pronged
cooperation with ALP**

Providing curriculum support

sented and discussed afterwards. The course is offered every year for use in grammar schools or in vocational schools.

The ifo Institute returned to Passau, Germany with a booth at the 40th Conference of Law and Economics Educators. Being able to speak directly with the over 200 teachers in attendance has given ifo a major visibility boost as a provider of curriculum support material.

YES! SCHOOL COMPETITION

In the 2018/2019 school year, the ifo Institute partnered with the Catholic University of Eichstätt-Ingolstadt to participate in YES! for the first time. This national school competition on economic policy issues is a joint project of the Leibniz Information Centre for Economics (ZBW) and the Joachim Herz Foundation under the patronage of the German Federal Ministry of Economic Affairs and Energy. YES! now has a number of partners from the Leibniz Association. In view of the scope of the knowledge-transfer activities, participation in YES! is particularly attractive for the ifo Institute.

ifo economists and specialists developed four topics for which the student teams could apply:

- From Flight to Labor Market – How Can the Integration of Refugees Succeed?
Expert support provided by: Yvonne Giesing, Carla Rhode, Tanja Stitteneder, and Madhinee Valeyatheepillay
- The Last-Mile Challenge – How Can the Economic Objectives of Delivery Services Be Reconciled with Resource-Conserving Urban Development?
Expert support provided by: Caroline Vogel and Sabine Rumscheidt
- Universal Basic Income in Germany – A Model for the Future or a Utopian Fantasy?
Expert support provided by: Marc Stöckli
- Efficient Energy Use: Your Role as an Agent of Change
Expert support provided by: Markus Zimmer

On July 12, 2019, more than 100 participants convened at the ifo Institute for the South-East regional final. Teams representing the ifo Institute and the Catholic University Eichstätt-Ingolstadt presented their solutions. The students chose the teams from the Alber-

tus-Magnus-Gymnasium Stuttgart (From Flight to Labor Market – How Can the Integration of Refugees Succeed?) and the Gymnasium bei St. Michael Schwäbisch Hall (The Last-Mile Challenge – How Can the Economic Objectives of Delivery Services Be Reconciled with Resource-Conserving Urban Development?). Both teams took part in the national final on September 26 and 27 in Hamburg. There the Gymnasium bei St. Michael Schwäbisch Hall took third place with its “P-Box – For Green Delivery” solution.

EDITORIAL ACTIVITIES

All ifo Institute publications fall under the responsibility of the Communications department. The department edits articles and submissions and also oversees the design and layout, print preparation, typesetting, and dispatch of the text either for in-house printing or to a third-party printer. Statisticians, graphic artists, typesetters, and printers implement the ideas of the editorial staff. They also work on projects within the purview of other ifo departments.

In 2019, the ifo Institute published the following:

- *ifo Schnelldienst*: Current policy issues and ifo research findings (published twice a month in German)
- *ifo Konjunkturperspektiven*: The latest results from ifo’s business surveys in the form of graphics, tables, and descriptive analyses that focus on select sectors, rotating through them in a sequence that repeats at periodic intervals (published monthly in German)
- *ifo Dresden berichtet*: A report on the economy, economic policy, and structural change in eastern Germany (published six times a year in German under the authority of ifo Dresden Branch)
- *ifo World Economic Survey*: Results of the ifo expert poll on the world economy in the form of graphics, tables, and descriptive analyses (published quarterly in English)
- *CESifo Forum*: Essays focusing on current economic topics of global interest by well-known international authors as well as data and information from the ifo Institute (published quarterly in English in cooperation with CESifo GmbH)
- *ifo DICE Report*: Articles on institutional regulations and economic policy measures that offer country comparative analyses (published quarterly in English)

- *CESifo Economic Studies*: Results from economic research and policy issues. *CESifo Economic Studies* is published by Oxford University Press, and the managing editor is Panu Poutvaara, Director of the ifo Center for International Institutional Comparisons and Migration Research (published quarterly in English, uses a referee system)

Added to this is a book series:

- ifo Beiträge zur Wirtschaftsforschung: Major research studies conducted by the ifo Institute

ifo Schnelldienst, *CESifo Forum*, and *ifo DICE Report* are also available in the EPUB format.

In addition, the ifo Institute publishes the ifo Forschungsberichte at irregular intervals, containing the results of expert reports that are not otherwise presented in book form. It also publishes the ifo Dresden Studien, which – under the authority of ifo Dresden Branch – address mainly issues pertaining to the eastern German Länder and their neighbors to the east.

The free *ifo Newsletter* is sent at the end of every month. It provides reports in German on new research findings, selected publications and events, personal profiles, deadlines, and much more about ifo Institute activities. A service of ifo Dresden Branch, the *ifo Dresden Newsletter* provides regular reports on the branch's latest publications and events. Newsletters, complete with tables of contents and download options, also accompany the publication of new issues of *CESifo Forum*, *ifo DICE Report*, and *ifo World Economic Survey*.

Some of the periodicals are made available to well-established online service providers for global distribution. A complete overview of the ifo Institute's publications and their availability can be found at <https://www.ifo.de/en/publications>.

As part of a knowledge-transfer project, ifo asked readers of its publications about their reading habits and what they expect from materials that present specialist economic information. The Institute took those findings and adjusted its publication program to reflect them over the course of 2019.

ifo Konjunkturperspektiven was completely redesigned from the ground up. The print edition was discontinued; in the future, *ifo Konjunkturperspektiven* will appear as a PDF file on the ifo Institute website. Texts on the economic sectors will also be dropped, so that starting in 2020, the journal will consist of figures and graphics on the sectors. A more detailed version of the sector reports and analyses will appear in *ifo Schnelldienst* as of 2020.

Publication frequency will also change this year, with *ifo Schnelldienst* to appear monthly. In addition to twelve regular issues, ifo Economic Forecasts will also publish special issues in June and December. The Joint Economic Forecast is available free of charge on the ifo website at <https://www.ifo.de/en/economic-forecasts>.

These changes aim to improve the way ifo publications inform the economic policy debate and to increase the involvement of ifo authors. In addition to its long-established research and survey findings, which will be retained, *ifo Schnelldienst* will provide regular reports on developments in selected sectors.

To continue responding quickly to the latest developments, ifo is offering a new publication format, *Schnelldienst digital*, in which one article will be posted in advance on the ifo website as a PDF.

New Schnelldienst digital

With the discontinuation of the World Economic Survey at the end of 2019, the *ifo World Economic Survey* journal was discontinued in 2020.

ifo Dresden

ifo Dresden Branch

The Dresden Branch of ifo Institute, established 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 Branch provides economic analyses dealing with the economic developments in the Free State of Saxony and eastern Germany. It focuses on policy-relevant issues using methods of applied or empirical economic research. In addition, ifo Dresden Branch is involved to a large extent in economic policy advice through expert opinions, lectures, and discussions with representatives of politics and administration. It 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.

ifo Dresden Branch currently works in the following **research areas**:

- business cycle and growth in Saxony and the new Länder
- human capital, structural change, and the position of Saxony and the new Länder in locational competition
- labor market and social policy in Saxony and the new Länder
- integration of Saxony and the other new Länder into the international division of labor (especially with central and eastern Europe)
- public finance and support of economic development in Saxony and the new Länder

ifo Dresden Branch is also working on the general topic of implications of demographic change on economic development. The shrinking and aging of the population will have a significant impact on nearly all fields of social and economic development and thereby pose new challenges to economic policy.

In addition to economic research, ifo Dresden Branch offers **extensive services**. Analyses oriented toward economic policy are published in the journal *ifo Dresden berichtet* and in the book series *ifo Dresden Studien*. ifo Dresden Branch provides information and advice on current economic policy issues to policymakers and the business community. It also organizes workshops and conferences.

The journal *ifo Dresden berichtet* has been published every two months since 1994. In this journal, ifo Dresden Branch 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 2019, two issues were released: No. 83 “Betrachtung und Analyse von Regionalindikatoren zur Vorbereitung des GRW-Fördergebietes ab 2021 (Raumbeobachtung)” and No. 84 “Wachstum und Produktivität 2035 – Innovations- und Produktivitätslücken auf Ebene der Bundesländer.”

Conferences and workshops regularly take place on the premises of ifo Dresden Branch. Workshops in 2019 included the 13th ifo Dresden Workshop on “Macroeconomics and Business Cycle Research” (January 25–26, 2019), the 9th ifo Dresden Workshop on “Labor Economics and Social Policy” in cooperation with TU Dresden (May 16–17, 2019), the 9th ifo Dresden Workshop on “Regional Economics” together with TU Braunschweig (September 12–13, 2019) and the 13th ifo Dresden Workshop on “Political Economy” (November 29–30, 2019) 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, four lectures were held in this series. Friedrich Breyer of Universität Konstanz, Michael Thöne of Universität zu Köln, Jens Südekum of Heinrich-Heine-Universität Düsseldorf, and C. Katharina Spieß of the German Institute for Economic Research (DIW Berlin) and the FU Berlin discussed their views on current policy issues with the audience from science, policy, and public administration.

Under the management of Marcel Thum and Joachim Ragnitz, 14 economists currently engage in research at the branch, of which nine 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 Technische Universität (TU) Dresden and the Statistical Office of the Free State of Saxony. Cooperation agreements cover in particular visiting fellowships of researchers, joint activities, and presentations. ifo Dresden Branch offers project-related work experience to interested students of economics. Furthermore, the branch is also directly linked to academic research through the appointment of research professors.

Workshop series

BUSINESS CYCLE AND GROWTH IN SAXONY AND THE NEW LÄNDER

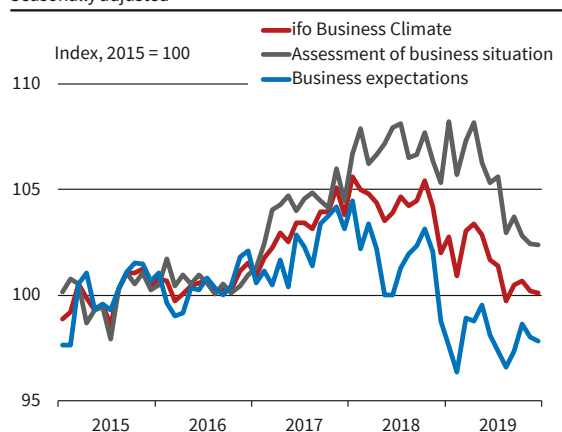
One research focus of ifo Dresden Branch is the monitoring and forecasting of the business cycle in Saxony and Germany's new federal states. For this purpose, the branch carries out monthly evaluations of the ifo Business Climate Index as well as semiannual business cycle forecasts for the Free State of Saxony and eastern Germany as a whole. Additionally, the branch conducts research at the intersection of business cycles and growth policy.

Eastern German chemical industry

In 2019, ifo Dresden carried out the study "Strukturanalyse der ostdeutschen Chemieindustrie" on behalf of the German chemical industry association Verband der Chemischen Industrie e.V. (VCI), Landesverband Nordost and Arbeitgeberverband Nordostchemie.

Besides third-party funded projects, ifo Dresden Branch also creates the monthly, regionalized evaluation of the ifo Business Climate Survey for eastern Germany and the Free State of Saxony. The results are published as a press release and as a regular contribution in the magazine "Wirtschaft in Sachsen - Das Entscheidermagazin der sächsischen Zeitung" to address a large audience of media, companies, and politicians.

ifo Business Climate Eastern Germany^a
Seasonally adjusted



^a Manufacturing, service sector, trade, and construction.
Source: ifo Business Survey, December 2019. © ifo Institute

In addition to the monthly business cycle surveys, in June and December ifo Dresden Branch forecasts economic development in eastern Germany and the Free State of Saxony for the current and the following year.

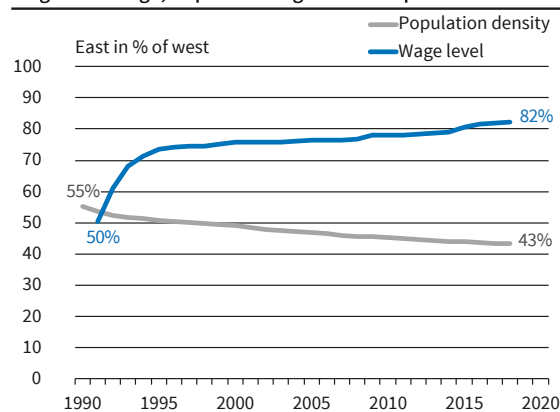
The results are published as a press release as well as in *ifo Dresden berichtet* (issues 01/2019 and 04/2019). They are also presented to the professional public in a press conference and at the ifo working group "Konjunkturbeobachtung Sachsen." In this working group, members of ifo Dresden Branch discuss business cycle developments in eastern Germany and the Free State of Saxony with representatives of ifo Institute in Munich, the German Federal Employment Agency, the Regional Employment Agency of the Free State of Saxony, the Statistical Bureau of the Free State of Saxony, representatives from various Saxon ministries, Creditreform, the Dresden Chamber of Crafts, the Chamber of Trade and Commerce, and other associations. This year the working group met for the 43rd and 44th time.

The branch hosts the annual ifo Dresden Workshop "Macroeconomics and Business Cycle Research," which is focused on the research output of junior researchers. This year the 13th workshop took place January 25–26.

HUMAN CAPITAL, STRUCTURAL CHANGE, AND THE POSITION OF SAXONY AND THE NEW LÄNDER IN LOCATIONAL COMPETITION

This field of work analyzes regional and sectoral disaggregated growth and convergence processes. The focus is on comparative analyses of eastern and western Germany as well as of rural and urban areas. The research group's aim is to propose policy options for adjusting the living conditions in economically lagging regions.

Wages Converge, Population Figures Drift Apart



Note: The figure shows the wage level (gross wages per employee) and the population density (inhabitants per km²) of East Germany in percent of the West German value. Berlin is not included.

Source: Federal Statistical Office; presentation of the ifo Institute. © ifo Institute

The 9th ifo Dresden Workshop on “Regional Economics” took place September 12–13, 2019. The workshop was jointly organized by Felix Rösel and Christian Leßmann from the Technische Universität Braunschweig.

On behalf of the German Environment Agency (UBA), ifo Dresden Branch – together with the Wuppertal Institut für Klima, Umwelt, Energie gGmbH and TU Dresden – worked on a case study on the structural change of the Saxon region of Lusatia. This case study, which was started in November 2016, examines the causes and effects of structural change processes. Previously implemented measures aimed at mitigating or fostering the structural change of Lusatia will also be evaluated. The study was completed in August 2019.

In 2019, ifo Dresden Branch continued working on the project “Innovationswerkstatt Dresden” (Innovation Workshop Dresden), which is on behalf of the German Federal Ministry of Economic Affairs and Energy. The project is conducted 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 fundamental 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 by May 2020.

Initial results from this project were discussed in *ifo Dresden berichtet* 4/2019. Since small and medium-sized enterprises often do not have sufficient skills and resources to successfully initiate or implement innovation projects, a more promising approach is to work in structured cooperative innovation projects, in which individual innovation functions are taken over by various project partners. However, this requires sufficient innovative cooperation capabilities. If these are insufficiently available, one solution is to initiate targeted measures to strengthen innovative and cooperation skills.

In *ifo Dresden berichtet* 3/2019, Julia Sonnenburg investigated the difference between urban and rural transition rates from primary to secondary school. The proportion of pupils who change to a secondary school after primary school is still significantly lower in rural areas than in urban regions. This is mainly due to school-related factors, teacher’s age, and the economic conditions in which educational processes take place.

Julia Sonnenburg, together with Friederika Boehme, analyzed the supply of kindergarten places in Dresden in an article published in *ifo Dresden berichtet* 4/2019. Their results show that there are enough kindergarten places available for children from the age of three in Dresden, when measured against the resident population. However, an undersupply of childcare places becomes apparent when looking at the city districts: in one in two districts, there is an undersupply of kindergarten places when compared to local demand.

LABOR MARKET AND SOCIAL POLICY IN SAXONY AND EASTERN GERMANY

In this research area, ifo Dresden Branch focuses on how education policy and demographic trends affect labor market outcomes.

On May 16 and 17, 2019, the ifo Dresden Workshop on “Labor Economics and Social Policy” took place for the ninth time. It was organized by Antje Fanghänel, Mona Förtsch, Katharina Heisig, Alexander Kemnitz, Julia Sonnenburg, and Michael Weber.

In an article in *ifo Dresden berichtet* 2/2019, Katharina Heisig summarized current studies on the topic of gender-neutral upbringing and education. Existing studies show that the development of children and adolescents is negatively affected if they are exposed to unequal treatment based on gender. Accordingly, it is recommended that measures are taken in childhood to counteract the gender-specific disadvantages of women and men.

In an article by Antje Fanghänel, Joachim Ragnitz, and Marcel Thum, it was shown that the basic pension as originally planned by the German Federal Ministry of Labour and Social Affairs set adverse incentives due to high transfer withdrawal rates. The coalition compromise on the basic pension adopted in November also shows a number of problems, especially with regard to the lack of needs-based fairness. An analysis of this issue will be published in the magazine *ORDO* at the beginning of 2020.

In an article published in *ifo Dresden berichtet* 3/2019, Xenia Frei and Marcel Thum gave an overview of previous studies on the relocation of public authorities and labor market structure. The analysis shows that empirical evidence for positive employment effects is scarce and that the effects on the local labor market

Gender-neutral upbringing

are mainly structural. The increase in employment in the public sector is accompanied by job losses in the manufacturing sector.

Together with Larissa Zierow of the ifo Center for the Economics of Education, Katharina Heisig investigated the long-term effects of the parental leave reform of 1986 in the GDR. The main result shows that the reform led to higher life satisfaction of children in adulthood. The study was published as *CESifo Working Paper* No. 7806 and as *SOEPpaper* 1059.

INTEGRATION OF SAXONY AND EASTERN GERMANY INTO THE INTERNATIONAL DIVISION OF LABOR

The Free State of Saxony is in active trade with other states. In the year under review, no major analyses were carried out in this field; rather, the activities of ifo Dresden Branch concentrated on a series of statements on the impacts of Brexit and the Russian sanctions on the Saxon economy.

PUBLIC FINANCE AND THE SUPPORT OF ECONOMIC DEVELOPMENT IN SAXONY

The staff of ifo Dresden Branch has been dealing intensively with various aspects of public finance and economic development for years. The public sector and structural aid are still of particular importance, especially for the structurally weak regions of eastern Germany. Thirty years after the fall of the Berlin Wall, the discussion surrounding the realignment of German regional policy was therefore a key research focus for the branch. Examples for current ifo Dresden studies on this topic are a report for the preparation of an all-German regional aid policy on behalf of the Thuringian Ministry of Economic Affairs, Science, and Digital Society, an analysis of the funding budget on behalf of the Kommission zur Vereinfachung und Verbesserung von Förderverfahren in Sachsen, as well as several contributions by Joachim Ragnitz to the discussion on the equivalence of living conditions or funding criteria in *ifo Dresden berichtet* (e.g., “Eignung von Regionalindikatoren zur Bestimmung der GRW-Fördergebiete ab 2021” or “Zur Debatte um die Gleichwertigkeit der Lebensverhältnisse: Was soll man tun und was nicht?”) or in *Wirtschaftsdienst* (“Strukturhilfen für Braunkohleregionen: Hilft viel auch viel?”).

Another question closely related to funding measures is the debate on the future of rural areas and possi-

ble government measures. ifo Dresden Branch discussed this topic in several contributions in *ifo Dresden berichtet*, in particular with regard to divergence in population development in eastern and western Germany since 1945 (“Die Wucht der deutschen Teilung wird völlig unterschätzt”), location of public administration (“Behördenverlagerungen verändern die Arbeitsmarktstruktur”) or hospital locations (“Krankenhäuser auf dem Land: Bürger sind gegen längere Wege”). Felix Rösel and Niklas Potrafke published a study in the journal *Regional Studies* according to which left-wing governments provide more hospital beds for their core constituency in big cities. Increasingly, the discussion also focuses on questions of political participation in rural areas. In 2019, researchers from ifo Dresden Branch investigated the link between local identity and voluntary commitment on behalf of the Friedrich Naumann Foundation for Freedom. The study “Stärkung kommunaler Identität” was able to show that a strong local connection is associated with a higher level of volunteer involvement. However, large-area mergers of municipalities reduces local identity.

Moreover, finances of municipalities and federal states have been an important focus of ifo Dresden Branch for years. In a study on behalf of the Saxon State Ministry of Finance the sustainability of the Saxon budget was investigated. It turns out that by the year 2030, revenues in the Free State of Saxony are not expected to be sufficient to cover expected expenditures. By the end of the decade, the gap is expected to amount to around EUR 1 billion. In order to balance expenditures and revenues, expenditure cuts have to be made, especially in the area of personnel.

Studies published in the journals *International Tax and Public Finance* and *Public Choice* showed efficiency gains for municipalities through the direct election of politicians, whereas they found no measurable fiscal or efficiency-related improvements due to the new double-entry bookkeeping accounting system in municipalities.

Moreover, political-economy issues are becoming increasingly relevant in society and research. 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 has a duration of three years. Felix Rösel examines causal relationships between social cohesion and the rise of

right-wing populism in Europe. The project addresses the question whether associations foster or prevent populism. One open question, for example, is whether and under what conditions associations, such as sport clubs, promote cohesion and democracy or contribute to the spread of populist tendencies. In 2019, ifo Dresden Branch published studies on populist voting behavior in the journals *Kyklos*, *Public Choice*, and *Regional Science and Urban Economics*, among others. Furthermore, investigations concerning the party preferences of former East Germans living in western Germany and the splitting of first and second vote in elections have been published in *ifo Dresden berichtet*.

On the occasion of the anniversary of the fall of the Berlin Wall in 2019, ifo Dresden Branch conducted a more in-depth analysis of the differences in attitudes between former East and West Germans (“Schlechter als erwartet, besser als gedacht: Die wirtschaftliche Situation in Ostdeutschland 30 Jahre nach dem Mauerfall”). Here it became apparent that the negative assessment of German unification and the situation in eastern Germany can hardly be explained by objective facts. The results can rather be attributed to deeper psychological causes (such as an insufficient appreciation of the efforts made by former East Germans to adjust after reunification). Partly, this could also be an explanation for the voting behavior in eastern Germany.

Projects Completed in 2019

Research Area Business Cycle and Growth in Saxony and the new Länder (Konjunktur und Wachstum)

Quarterly Business Cycle Report for Saxony-Anhalt

J. A. Nauerth, J. Ragnitz, M. Weber for the Ministry of Science, Economics, and Digitalization 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 at a quarterly frequency, but state-level time series are released only once a year. ifo Dresden Branch calculates quarterly GDP and GVA data for the state Saxony-Anhalt on behalf of the Ministry of

Science, Economics, and Digitalization 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 the ifo website.

Research Area Human Capital, Structural Change, and the Position of Saxony and the new Länder in Locational Competition (Human-kapital, Strukturwandel und die Position im Standortwettbewerb)

Demographic Development of the Associations of Municipalities Linz on the Rhine and Bad Hönningen

R. Nitschke, J. Ragnitz, F. Rösel for the Association of Municipalities Linz on the Rhine (Verbandsgemeinde Linz am Rhein), June 2019 to July 2019.

On behalf of the Association of Municipalities Linz on the Rhine and Bad Hönningen, ifo Dresden Branch investigates the future demographic development of the associations of municipalities Linz on the Rhine and Bad Hönningen. The study is based on population data from the Statistical Office of Rhineland-Palatinate and KommWis Ltd. for 2018 and 2019.

The study shows the future development of the population size and the demographic composition of the associations of municipalities Linz on the Rhine and Bad Hönningen up to 2035. We analyze the influence of different migration scenarios on population development. The assumptions regarding the future migration balance, birth rates, and mortality rates are based on the methodological approach of the Statistical Office of Rhineland-Palatinate. In contrast to the calculations of the Statistical Office of Rhineland-Palatinate, our population projection is based on population size data from KommWis Ltd. (2019).

Our calculations at municipal level show a more optimistic picture than the projections of the “Fifth Regionalized Population Projection” from the Statistical Office of Rhineland-Palatinate. The study shows that the future demographic development at municipal level is strongly dependent on assumptions about future trends in migration flows. But these assumptions are

Influence of different migration scenarios

associated with large uncertainty. Therefore, we conclude that for political decisions small-scale population projections should be used with caution.

Alternative Indicators to Measure Area Efficiency

J. Ragnitz for the Chamber of Commerce and Industry for Munich and Upper Bavaria, June 2019 to October 2019.

The study was conducted under a framework agreement with the Chamber of Commerce and Industry for Munich and Upper Bavaria to provide objective, scientifically-based economic advisory work. The study deals with the goal of reducing the utilization of new land for the purposes of human settlement and transport to less than 30 ha per day by the year 2030, which is fixed in the German federal government's sustainability strategy. However, as it seems unlikely that this objective can be reached in time, there are increasing calls for strict quantitative instruments to reduce land use. The study primarily focuses on the development of a new efficiency indicator of land use that seems more suitable for the assessment of land use than merely the increase in settlement and transport area. For this purpose, a distinction is made between growth-related demand for land on the one hand and improvement in the efficiency of land use on the other hand. Furthermore, the study takes a critical look at the currently discussed instruments of land use policy. The publication of the analysis is planned for 2020.

Analysis of the Eastern German Chemical Industry

N. Gillmann, J. A. Nauerth, R. Nitschke, J. Ragnitz for the German chemical industry association Verband der Chemischen Industrie e.V. (VCI), Landesverband Nordost and Arbeitgeberverband Nordostchemie, August 2019 to October 2019.

This project includes a comprehensive review of the chemical and pharmaceutical industry in eastern Germany. Furthermore, it compares these two economic sectors with their western German counterparts. Both the chemical and pharmaceutical industries are essential for the German economy. Measured by their domestic and international sales, the two industry sectors rank among the largest in Germany. In addition, the chemical industry is a very important player for the whole economy due to its upstream position for other industries.

For eastern Germany, the highest density of the chemical industry in terms of establishments and employment is located in the south-east of Saxony-Anhalt (Central German Chemical Triangle). Further important locations are Saxony, Thuringia, and the greater Berlin area. The pharmaceutical industry is mainly clustered around Berlin.

A comparison of the chemical and pharmaceutical industries in eastern Germany with their western German counterparts shows no substantial differences for most economic and business indicators: in terms of sales, revenues, or employment, both German regions have shown the same development in recent years. However, substantial differences emerge in research and development (R&D) intensity. The chemical industry in eastern Germany in particular lacks substantial R&D investment. Increasing R&D expenditures are highly recommended to defend the industry's strong international market position. The pharmaceutical industry in eastern Germany shows relatively high investments in R&D, even though it is still lagging behind western Germany.

Research Area Public Finance and Support of Economic Development in Saxony and the new Länder (Öffentliche Finanzen und Wirtschaftsförderung)

Evaluation of the Operational Program 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, Labor, and Transport, November 2016 to August 2019.

From 2014 to 2020, the Free State of Saxony will receive EUR 2.1 billion from the European Regional Development Fund (ERDF). According to the European Union's guidelines, the program has to be evaluated with regard to its effectiveness, efficiency, and impact. This evaluation is the subject of the project at hand. Additionally, the project provides ad hoc assessments of proposed amendments to the operational program.

The project is carried out jointly by ifo Dresden Branch, the Institute for Financial and Regional Analyses (GEFRA), the Joanneum Research Forschungsgesellschaft, and Stefan Meyer of Kovalis. The ifo Institute is primar-

ily responsible for the planned ad hoc analyses. In the period under review, no requirements were made by the client.

Report on the Preparation of an All-German Regional Funding Program

J. Ragnitz for the Thuringian Ministry of Economy, Science, and the Digital Society (Thüringer Ministerium für Wirtschaft, Wissenschaft und Digitale Gesellschaft, TMWWDG), January 2019.

This project aimed to identify regional indicators to define development areas. For further information, see project “Betrachtung und Analyse von Regionalindikatoren zur Vorbereitung des GRW-Fördergebietes ab 2021 (Raumbeobachtung)” and *ifo Dresden Studien* No. 83. The work mainly served to inform the contracting ministry and did not lead to any independent publication.

Promoting Local Identity

M. Förtsch, F. Rösel, J. Sonnenburg, M. Thum for the Friedrich-Naumann-Stiftung für die Freiheit, February 2019 to May 2019, publication in *ifo Dresden berichtet* 6/2019; 1/2020.

On behalf of the Friedrich Naumann Foundation for Freedom, ifo Dresden Branch investigates the emotional attachment of citizens to their own local community (“local identity”) and the significance of local identity for political attitudes and social commitment. The study is based on representative surveys of the German population between 1981 and 2017.

The study shows the development of local identity in Germany over time. It compares local identity with regional and national identity in Germany and in some European countries. We analyze differences in local identity according to place of residence, socio-economic characteristics, and party preference. We use regression analysis to examine the role of local identity in social and political activities and attitudes. In addition, we identify factors that go along with higher local identity.

Four out of ten citizens in Germany have a high local identity. Socio-economic and institutional factors have an influence on this identity, and local identity plays an important role in local social engagement and political attitudes.

Analysis of the Funding Budget on Behalf of the Commission for Simplification and Improvement of Funding Procedures

J. Ragnitz for the Commission for Simplification and Improvement of Funding Procedures, Saxon State Ministry of Finance (Kommission zur Vereinfachung und Verbesserung von Förderverfahren, Sächsisches Staatsministerium der Finanzen), November 2018 to February 2019, publication as Final Report of the Funding Commission, 2019.

The “Funding Commission” of the Free State of Saxony commissioned the ifo Institute to analyze economic promotion in the Free State of Saxony. The ifo Institute received access to detailed budget data. The objective was to identify the expenditures that can be classified as measures of economic promotion. This was achieved by developing various classification schemes.

It became apparent that the budget statistics were inadequate to accomplish the required task. Therefore, the project was stopped; the Funding Commission’s report critically evaluated the Free States’ budget statistics and called for their future adjustment.

Development of the Saxon Budget – Risks in Public Staff Area?

D. Bauer, J. Ragnitz, J. Sonnenburg for the Saxon State Ministry of Finance (Sächsisches Staatsministerium der Finanzen), March 2019 to June 2019.

The consequences of demographic change present specific challenges for the Free State of Saxony. An aging and shrinking population contains the risk of declining employment potential and decreasing economic performance, which will lead to smaller public revenues. However, expenditures are likely to remain more or less constant over time. Against this background, we examine the development of the Saxon budget over the period to 2030. The project addresses the question of what financial options the Free State of Saxony has for dealing with the described challenges.

We predict the Free State of Saxony’s revenues and expenditures separately for the key budget items based on the regional development up to the year 2030.

The results indicate a budget deficit for the Free State of Saxony of nearly EUR 1.0 billion by 2030. Although public revenues are expected to increase significantly

Development of Saxony’s budget

in the following years, expenditures may grow more strongly. This is primarily due to the fact that the expenditure level in the base year (2020) can be financed only by drawing on reserves. As the possibility of financing public expenditures by reserves disappears in 2021, there will be a coverage gap to the extent mentioned above. Hence, the Free State of Saxony will be faced with the challenge of identifying potential fiscal savings to ensure a balanced budgetary result. One possibility is a reduction in human resources or voluntary expenditures for investment and economic promotion.

Current Projects

Research Area Human Capital, Structural Change, and the Position of Saxony and the New Länder in Locational Competition (Human-kapital, Strukturwandel und die Position im Standortwettbewerb)

Structural Change in Coal Regions as a Process of Economic and Socioeconomic Transitions – Opportunities for a Socially Compatible Structural Change in the Light of Climate Policy Goals

J. A. Nauerth, J. Ragnitz for the Wuppertal Institute for the German Environment Agency (UBA), November 2016 to August 2019, extended to January 2020.

The economic and industrial structure of Lusatia, a region in southern Brandenburg and eastern Saxony, is characterized by the mining and energy sectors. Before German reunification, more than half of the employees of Lusatia worked in these sectors. With the collapse of the former GDR, employment in this region dropped sharply. Structural change in Lusatia is an ongoing process. Climate policy measures have speeded up the decommissioning of coal-fired power plants, thus triggering further structural changes. On behalf of the German Environment Agency (UBA), ifo Dresden Branch – together with the Wuppertal Institut für Klima, Umwelt, Energie gGmbH – works on a case study of the historical structural change in Lusatia. It examines the causes and impacts of structural change processes and evaluates previously implemented measures that aim to mitigate/foster structural change in Lusatia. UBA plans to publish the final study in 2020.

Innovation Workshop Dresden – Joint Project: Strengthening the Cooperation of Fundamental Research Institutions and Small and Medium-Sized Enterprises (SMEs) – Subproject: Economic Analysis and Evaluation of New Instruments

K. Heisig, J. Ragnitz in cooperation with the German Aerospace Center (DLR), Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Hochschule für Technik und Wirtschaft (HTW) Dresden, and TU Dresden for the German Federal Ministry of Education and Research, March 2017 to February 2020, publication of first results in *ifo Dresden berichtet* 4/2019.

Entrepreneurial innovation is crucial for 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 an innovation management, and high economic risk. R&D expenditures by publicly financed fundamental research institutions in Germany, by contrast, have been increasing in recent years. Research institutions are increasingly showing efforts to improve the transfer of knowledge 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.

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 branches, their business prospects, profits, and competitiveness. The information in these special reports can indicate the medium-term prospects for the respective branches as well as opportunities and risks within the structural transformation. The “*Branchen special*” reports are employed primarily by co-operative banks in their lending and consulting business. Company consultants are provided with a survey of prospects and risk profiles of individual branches.

Changes in the mining
and energy sectors

Research Area Public Finance and Support of Economic Development in Saxony and the New Länder (Öffentliche Finanzen und Wirtschaftsförderung)

Local Social Capital and the Rise of Right-Wing Populism

F. Rösel for the German Research Foundation (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 (MWE) 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 Branch evaluates the economic eligibility of applications for financial support. The relevance of the applicant company is evaluated in terms of gross value added, local labor market relevance, and productivity.

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 University of Munich (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 the:

- support of exchanges between LMU and the ifo Institute, and the development 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
- organization of conferences and seminars

EXCHANGES BETWEEN LMU AND THE IFO INSTITUTE

CESifo GmbH supports the active participation of researchers from LMU and the ifo Institute in various academic conferences.

The joint appointment of professors, who work both at the ifo Institute and also 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 not only strengthen 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

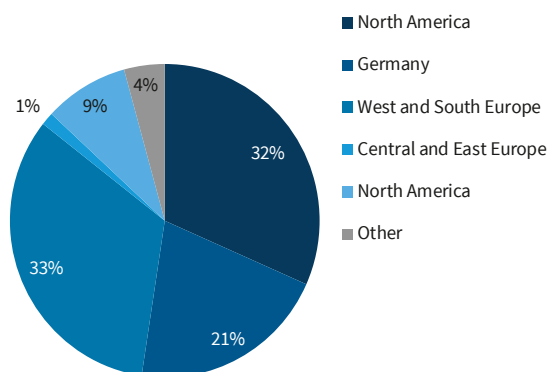
The CESifo Research Network aims to bring researchers with common research interests into contact with one another and to promote collaboration between network members and Munich-based researchers via events and publications. The network is primarily composed of economists with a proven track record in

their respective field and who have been invited to visit CES or the ifo Institute as a guest researcher based on a refereed selection procedure. The CESifo Research Network continued to expand in 2019 and totaled 1,653 members as at December 31, 2019, making it one of the biggest networks of this kind in the world.

One of the largest networks in the world

The CESifo Research Network’s members consist of 1,347 fellows and 306 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 many 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.

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 “area directors,” who contribute to the network with their international standing and expertise.

The network’s area directors are:

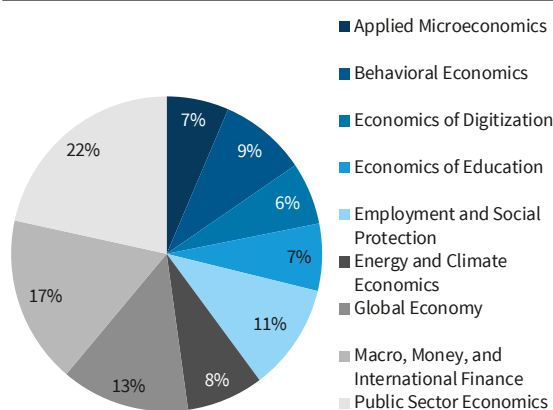
- Christian Gollier, University of Toulouse, Area Director for Applied Microeconomics
- Ernst Fehr, University of Zurich, and Klaus Schmidt, LMU, Area Directors for Behavioral Economics

Ten area directors

- Stephen P. Ryan, Washington University in St. Louis, Area Director for Economics of Digitization
- Eric A. Hanushek, Stanford University, Area Director for Economics of Education
- Kai A. Konrad, Max Planck Institute for Tax Law and Public Finance, Munich, Area Director for Employment and Social Protection
- Michael Hoel, University of Oslo, Area Director for Energy and Climate Economics
- Peter H. Egger, ETH Zurich, Area Director for Global Economy
- Markus K. Brunnermeier, Princeton University, Area Director for Macro, Money, and International Finance
- Rick van der Ploeg, University of Oxford, Area Director for 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



Source: CESifo.

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Annual prize

CESifo GmbH provides network members with CESifo publications. It organizes 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 been awarded to a young economist annually since 2008. The aim of this

prize is to identify promising young researchers and to establish early links to the CESifo Network.

The CESifo Distinguished Affiliates of 2019 were:

- Applied Microeconomics: Raul Sanchez de la Sierra, University of Chicago
- Behavioral Economics: Matthew Lowe, University of British Columbia
- Economics of Digitization: Daniel Ershov, Toulouse School of Economics Benjamin T. Leyden, Cornell University
- Economics of Education: Camille Terrier, University of Lausanne
- Employment and Social Protection: Christopher Roth, Institute on Behavior and Inequality (briq)
- Energy and Climate Economics: Paige Weber, University of California, Santa Barbara
- Global Economy: David Krisztian Nagy, Centre de Recerca en Economia Internacional
- Macro, Money, and International Finance: Paymon Khorrami, Imperial College Business School Jonathan Payne, New York University
- Public Sector Economics: Arthur Seibold, University of Mannheim

The close links between Munich-based researchers and external researchers are further strengthened by the **visitor program**. In 2019, the ifo Institute welcomed 51 international researchers to initiate or continue joint projects with Munich-based researchers. The program 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. The discourse at the European level, which centers on Brussels, is leading to a new political reality that is changing Europe. It is important that economists 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 impetus 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 for the 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 scientifically 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 USA, namely:

- Torben Andersen, Aarhus University
- Giuseppe Bertola, EDHEC Business School, University of Turin
- Clemens Fuest, ifo Institut and LMU
- Cecilia Garcia-Penalosa, Aix-Marseille Université
- Harold James, Princeton University
- Jan-Egbert Sturm, KOF, ETH Zürich
- Branko Urošević, University of Belgrade

The EEAG releases an annual report in which it not only analyzes 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 many European cities (Brussels, Berlin, Paris, Stockholm, and Zurich). Detailed articles in leading European newspapers and interviews on major TV channels reflect the need for scientifically 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 2020 was presented at the EconPol Europe Annual Conference in Brussels, November 7–8. 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. The conference is supported by CESifo.



Various ifo research centers provide background research for the report as well as contributing to the editing and typesetting process. The European economic forecast is prepared almost entirely by the ifo Institute.

The **Munich Seminars**, jointly organized 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 2019, a total of 11 Munich Seminars were organized. Full reports on most Munich Seminar lectures are published in the *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.

11 Munich Seminars

23 conferences and events

CONFERENCES AND EVENTS

As in past years, a major focus of CESifo GmbH's activities was the organization and administration of academic conferences. With the goal of strengthening Munich's standing as a science and research location and supporting empirical and theoretical research in economics, CESifo (co)organized 23 scientific conferences and events in 2019.

CESifo hosts two different types of conferences. In addition to the **nine** established annual **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 permanent fixture in the CESifo event calendar and has earned a solid reputation among international economists. In 2019, the Venice Summer Institute comprised five workshops, dealing with the following topics:

- “Economics of the Gig Economy,” organized by Oliver Falck and Justus Haucap
- “Taxation in the Digital Economy,” organized by Marko Köthenbürger and David Agrawal
- “The Future of Europe,” organized by Jan-Egbert Sturm, Balazs Egert, and Nauro Campos
- “Poverty, Inequality and their Association with Disasters and Climate Change,” organized by Ilan Noy and Jasmin Gröschl
- “Gender in the Developed and Developing World,” organized by Basit Zafar and Seema Jayachandran

The **Musgrave Lecture** in honor of Richard Musgrave was a special highlight in 2019. The associated prize is awarded to an internationally renowned economist working in the area of public finance, following selection by the President of the ifo Institute and the President and Vice Presidents of the International Institute of Public Finance (IIPF). Professor Roger H. Gordon, University of California, San Diego, was awarded the prize in 2019.

In addition, CESifo organized or assisted partner organizations with several of their scientific events, including:

- “Banking and Institutions,” jointly organized with the ifo Institute
- “Doctoral Workshop on the Economics of Digitization,” jointly organized with ParisTech, University of Toulouse, University of Liège, and University of Leuven
- “CESifo Delphi Conference,” jointly organized with University of Athens
- “CEMIR Workshop,” jointly organized with the ifo Institute
- Annual Meeting of the Health Economics Program by the German Economic Association
- “Workshop on Political Economy,” jointly organized with Technical University of Dresden and the ifo Institute (Dresden Branch)
- “Predictive People Analytics,” jointly organized with LMU Munich
- “Norwegian German Seminar on Public Economics,” jointly organized with the Norwegian Center for Taxation at NHH and Oslo Fiscal Studies at UiO

These international conferences offer Munich-based researchers an opportunity to interact with researchers from all over the world and establish collaborations. Furthermore, the events promote the international reputation of Munich as 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 2019, 598 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 Forum** is a nonpartisan journal with a truly European perspective. It reflects the scope of activities

undertaken by CES and ifo, from scholarly academic research to up-to-date business data. The journal contains short and incisive articles on economic problems written by academics and politicians from various countries.

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 nonspecialist 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, multistage refereeing process. In 2019, two new books were published on “Disrupted Economic Relationships” and “The WTO and Economic Development.”

The **CESifo website** is a portal of choice in its field. It was relaunched in 2019 with new content and design.

In short, the research collaboration between the ifo Institute, LMU, and the international scientific community continued to flourish in 2019. 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 199–217 (<http://www.ifo.de/Jahresbericht>).

CESifo Website: <https://cesifo.org>

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 143–217 (<http://www.ifo.de/Jahresbericht>).

CONFERENCES

Besides regular events, like the Annual Meeting, EURO-CONSTRUCT, ifo Industry Colloquium (ifo Branchen-Dialog), a number of special conferences, workshops and press conferences were held during 2019. These included:

- SEEM – Seminar on Energy and Environmental Economics “How Consumers Trade Off Supply Security and Green Electricity: Evidence from Germany and Great Britain”
- Workshop on “Macroeconomics und Business Cycle”
- ifo CEMIR Seminar “Self-Selection and Human Capital of Refugees”
- ifo-Seminar “Towards an Empirically Founded Behavioural Macro – Exploiting the Internet as a Data Source for Social Science”
- SEEM – Seminar on Energy and Environmental Economics “Pledge-and-Review Bargaining”
- ifo CEMIR Seminar “Foreign Peer Effects and STEM Major Choice”
- ifo CEMIR Seminar “On the Anatomy of a Refugee Dispersal Policy: Neighborhood Integration and Dynamic Sorting”
- Workshop on “Banking and Institutions”
- SEEM – Seminar on Energy and Environmental Economics “Multi-Product Supply Function Equilibria”
- Research Seminar “Economics of Education”
- Workshop “Labor Economics and Social Policy”
- SEEM – Seminar on Energy and Environmental Economics “Dynamic Pricing of Electricity: Money on the Table”
- Workshop on “Economics of Violence against Women”
- SEEM – Seminar on Energy and Environmental Economics “The Informational Value of Environmental Taxes”

- CEMIR Junior Economist Workshop on Migration Research
- Workshop “Opportunities, Mobility, and Well-Being”
- Munich Inequality Workshop
- SEEM – Seminar on Energy and Environmental Economics “Using Tradeable Permits to Manage Urban Traffic Congestion”
- ifo CEMIR Seminar “Immigration Trumps Poverty: Causal Impact on Demand for Redistribution in a Survey Experiment”
- SEEM – Seminar on Energy and Environmental Economics “Market Design Considerations for Scarcity Pricing: A Stochastic Programming Framework”
- “1. Industry – Academia Summit: Predictive People Analytics”
- Workshop “Political Economy”
- SEEM – Seminar on Energy and Environmental Economics “Buy Coal, Tax Gas! Supply- and Demand-Side Climate Policies when Fuel Emission Intensities Differ”

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 2019, a large number of ifo staff members gave 180 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 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
- *CESifo 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 neighbors
- *ifo Working Papers*

- Christina Littlejohn, University of Munich
- Prof. Dr. Volker Meier, University of Munich
- Dr. Lukas Mergele, University of Munich
- Prof. Dr. Chang Woon Nam, University of Applied Sciences, Ismaning
- Dr. Florian Neumeier, University of Munich
- Dr. Till Nikolka, Macromedia University of Applied Sciences, Munich
- Prof. Dr. Karen Pittel, University of Munich
- Prof. Dr. Niklas Potrafke, University of Munich
- Prof. Panu Poutvaara, Ph.D., University of Munich
- Prof. Dr. Joachim Ragnitz, Dresden University of Technology
- Prof. Helmut Rainer, Ph.D., University of Munich
- Sarah Reiter, University of Munich
- Dr. Sven Resnjanskij, University of Munich
- Dr. Felix Rösel, Dresden University of Technology
- Britta Rude, University of Munich
- Alex Schmitt, Ph.D., University of Munich
- Dr. Simone Schüller, University of Munich
- Suphi Sen, Ph.D., University of Munich
- Marc Stöckli, University of Munich
- Daniel Stöhlker, University of Munich
- Prof. Dr. Marcel Thum, Dresden University of Technology
- Dr. Katharina Werner, University of Munich
- Dr. Klaus Wohlrabe, University of Munich
- Dr. Larissa Zierow, University of Munich

Lectures at German universities

TEACHING AND EXTERNAL RELATIONS

A number of ifo staff taught or presented lectures at universities in 2019:

- David Bauer, Dresden University of Technology
- Dr. Markus Drometer, University of Munich
- Dr. Thomas Fackler, University of Munich
- Prof. Dr. Oliver Falck, University of Munich
- Xenia Frei, Dresden International University
- Prof. Dr. Dr. h.c. Clemens Fuest, University of Munich
- Dr. Cornelia Geißler, University of Augsburg
- Dr. Yvonne Giesing, University of Munich
- Dr. Klaus Gründler, University of Munich
- Dr. Christa Hainz, University of Munich and University of Applied Sciences, Munich
- Lea Immel, University of Munich
- Lavinia Kinne, University of Munich
- Dr. Robert Lehmann, Deggendorf Institute of Technology
- Philipp Lergetporer, Ph.D., University of Munich
- Valentin Lindlacher, University of Munich

The ifo Institute was host to 68 visiting researchers from a variety of countries, and provided 58 students in Munich and five students in Dresden with their first opportunities in empirical economic research.

Personnel, Finances, and Organizational Bodies

Personnel Development

In spring of 2019, Prof. Gabriel Felbermayr, Director of the ifo Center for International Economics, left the Institute to take over as President of the Institute for the World Economy in Kiel. The search for his successor, conducted in cooperation with University of Munich (LMU), has been completed. With the appointment of Dr. Lisandra Flach, another woman will become the head of an ifo center.

In January 2019, Dr. Cornelia Geißler took over management of the Press, Publications, Conferences department, which was renamed Communications at the same time. Under her leadership, the ifo website was relaunched in the first half of 2019. Halfway through the year, Mr. Kumar Subramani took over management of the IT department.

Niko Jaakola, a research associate in the Center for Energy, Climate, and Resources, joined the University of Bologna in summer 2019 as a senior assistant professor. In spring 2019, Alexander Sandkamp received an offer to be a junior professor at Kiel University directly after earning his doctorate in the Center for International Economics.

TRENDS IN EMPLOYEE NUMBERS

As of December 31, 2019, the number of staff at the Institute fell by 11 (-5.2%) to 201. The number of scientific staff decreased by one person, while the number of doctoral students decreased by six, the number of specialists remained unchanged, and the number of technical staff/assistants increased by one. 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 four people, and the number of trainees by one.

Despite the marked decline in headcount, the number of part-time staff fell by just two people down to 93 (-2.1%). This decrease did not affect the non-scientific area.

Doctoral students and scientific staff (postdocs) employed by the ifo Institute are always given fixed-term 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 on researcher contracts be removed. In 2019, contract term limits were partially removed for a scientific staff member who took a position heading up the new contract studies service team. The team's

tasks include promoting the acquisition of contract studies and providing advice and support on topics related to contract-based activities.

The number of fixed-term contracts fell by nine to 80, due primarily to the decline in the number of doctoral students. Thus, the proportion of the entire workforce with such contracts decreased to 39.8% (2018: 41.9%). 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 six (-5.2%). However, the proportion of women in the overall workforce held steady at 54.7%. The number of women remained unchanged among scientific staff, decreased by two among doctoral students, and rose by one person each among specialists, technical staff, and assistants. Nevertheless, the proportion of female doctoral students rose from 48% in 2018 to precisely 50%. In addition, staff on parental leave or other leave are not included in the statistics. When staff on leave are included in the calculation, the proportion of female doctoral students goes up to 52%. This high proportion increases the chances of recruiting women who have successfully completed their doctorates to continue their academic careers by doing research at the ifo Institute. The share of women among scientific staff increased slightly in 2019, up from 24.6% in 2018 to its current level of 25%. The very high proportion of women among non-scientific staff fell from 68.3% to 64.3%.

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, that figure rose to 87.5% (2018: 86%). If doctoral students are included in the figure, a total of 93% of scientific staff either held a doctorate or were working on their doctorates as of December 31, 2019 (2018: 92.5%). The share of professors and researchers with habilitation degrees decreased from 28.1% in the previous year to 25% in 2019.

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 Insti-

Larger proportion of female doctoral students

tute. As of December 31, 2019, their number fell by two to 27. Of the heads of ifo research centers, two are foreign nationals and one held a position at a foreign university before being appointed by the ifo Institute. There were seven non-German nationals (2018: 10) and three “returnees” among the scientific staff (2018: 3). As in the previous year, eight doctoral students are non-German nationals and another nine (2018: 8) are German nationals who studied abroad before being appointed by the ifo Institute. As of December 31, 2019, 27% of scientific staff were non-German nationals or Germans who had worked at a foreign university or who had completed their studies abroad (2018: 27.1%) prior to joining ifo.

Number of Staff at Year-End 2019 and 2018

	Total staff		Women	
	2019	2018	2019	2018
Research and service				
Scientific staff	56	57	14	14
Doctoral students*	44	50	22	24
Specialists	22	22	16	15
Technical staff/assistants	22	21	21	20
Infrastructure				
Non-scientific staff	56	60	36	41
of which staff with management responsibilities**	14	15	8	10
Trainees	1	2	1	2
Total	201	212	110	116
	Part-time workers		Fixed-term contracts	
	2019	2018	2019	2018
Research and service				
Scientific staff	12	10	33	33
Doctoral students*	38	44	44	50
Specialists	11	8	1	1
Technical staff/assistants	12	11	0	0
Infrastructure				
Non-scientific staff	20	22	1	3
of which staff with management responsibilities**	4	5	1	1
Trainees	0	0	1	2
Total	93	95	80	89
	Post-docs/ habilitations, professors		women	
	2019	2018	2019	2018
Scientific staff	49/14	49/16	9/1	9/1

*Without guest doctoral students. – **Non-scientific staff compensated according to TV-L E13 and upward

FURTHER EDUCATION FOR RESEARCHERS

The ifo Institute endeavors 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. 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 strategy 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 organizational 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.

Support of junior economists – especially the training of doctoral students – is particularly important. ifo’s doctoral program serves the general development of junior economists 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 continues to offer strong support to doctoral candidates completing their studies at ifo, helping them in planning their next career move.

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 awarded a Roland Berger doctoral fellowship for three years in honor 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. Dr. Marc Piopiunik and Dr. Katharina Werner, both of whom themselves completed ifo’s doctoral students program, once again performed this task with great commitment in 2019.

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 Department 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 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, Prof. Marcel Thum, holds a chair at the Technical University of Dresden (TUD) and his deputy, Prof. 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 junior economists at an early stage of their career to prepare to publish articles in internationally renowned peer-reviewed journals. In the year under review, ifo researchers gave 180 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 offers individual further

training measures. Nine male ifo researchers and eight female researchers were working on their habilitation in 2019.

In 2017, in order to support doctoral students, the Institute was granted membership to the group of institutes supported by the Bernt-Rohrer Foundation. The Foundation’s objective is to support excellent students and doctoral candidates in their study and/or academic careers. In 2017, the Foundation awarded two publication fellowships to doctoral students at the ifo Institute; these were to support the recipients in the publication of a top scholarly paper with them as sole authors. In 2018, two doctoral students won fellowships abroad that enabled them to plan and cofinance a research stay of several months each in the US. The Institute was honored again in 2019, with one female doctoral student receiving a publication fellowship and another winning a fellowship for a research stay in London.

Another initiative of the 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 LMU together established a postdoctoral program (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. Four fireside chats and a junior faculty retreat were held in 2019, with another two leadership workshops planned for 2020.

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 2019 and in the winter semester 2019/2020, ifo scientists offered 67 courses. This is of particular benefit to empirically oriented subjects. 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

**Amassadors for the
“ifo brand”**

and research findings as well as new developments in economics. Speakers and attendees are primarily from the ifo staff and LMU. Workshops lasting several days at which ifo research teams can exchange information on current projects are also organized 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 totaled 83 in 2019 (2018: 54). In recent years, it has also become established practice for ifo researchers to spend several months on research leave abroad. In 2019, there were a total of 30 guest stays, 17 of which lasted several months and were completed at top universities in the US, Paraguay, Israel, and Europe (the UK, Sweden, Norway, Belgium, France). 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 development of junior economists begins in the ifo Institute with the employment of interns. Their importance for the Institute is significant, since former interns often apply and are accepted for posts as doctoral students. A total of 63 interns gained their first experience of empirical economic research at the ifo Institute in 2019 (2018: 56). Of this total, 39.7% were women (2018: 53.6%). Unfortunately, on account of the applications received, the Institute was far short of meeting its target gender ratio in 2019; however, it continues to pursue its goal of maintaining 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 above-mentioned 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, 243 further training measures were approved in 2019, of which 201 were also conducted in that year. Most of the remaining measures are to be completed in 2020. 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. In addition, many SharePoint training sessions were held in 2019 due to the Institute's switch to a SharePoint-based intranet. Sessions on academic writing and data protection were also well attended. These measures were complemented by customized courses to deal with challenges encountered in individual tasks. These are usually integrated directly into the immediate field of activity 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 endeavors to develop junior staff in the non-scientific area. It regularly offers an Office Communication Trainee Program. One junior economist successfully completed this program in June 2019 and took on a specialist position in the Personnel and Law department. Currently, one trainee position has been filled, with a second to be added in September 2020.

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-reviewed journal. Since 2018, the focus has been on young scientific talent. In 2019, the award went to Dr. Marc Piopiunik from the ifo Center for the Economics of Education for his paper entitled "Africa's Skill Tragedy: Does Teachers' Lack of Knowledge Lead to Low Student Performance?" He published it together with Jan Bietenbeck and Prof. Simon Wiederhold in the *Journal of Human Resources*.

The ifo Institute prize for outstanding success in the management of contract studies went to the interdepartmental team of Anita Fichtl, Victoria Endl-Geyer,

30 guest stays around
the world

Clara Albrecht, Prof. Helmut Rainer, and Dr. Joachim Ragnitz. They won for their report entitled “Germany 2017 – Study on the Mindsets and Behavior of Citizens in Post-Reunification Germany,” conducted on behalf of the German Federal Ministry for Economic Affairs and Energy. In addition, two special awards were given in conjunction with a dinner for all the members of the winning project team. The first went to the business survey team to commemorate 70 years of ifo Business Surveys, which were established the same year the Institute was founded. A second prize went to the entire CESifo GmbH team, which was created exactly 20 years ago and supports the ifo Institute mainly in conference management.

EQUAL OPPORTUNITIES AT THE IFO INSTITUTE

The ifo Institute actively promotes equal opportunities for women and men. In this important task, the Executive Board is supported by two women: an Equal Opportunity Officer at its Munich location and a Women’s Representative at its Dresden Branch. The Institute’s equal opportunities plan has the primary objective of gradually reducing the underrepresentation 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 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 Program 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 2025.

In 2019, 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 so far have been directed exclusively at female doctoral students. Overall, the share of women among scientific staff, including doctoral students, saw a slight rise from 35.5% to 36% in 2019. However, if all staff on leave were included, the proportion of women would be 38.7%.

After a test phase, in fall 2019 the Institute changed its rules governing working hours. Economists and doctoral students no longer book their time electronically and do not need to adhere to the afternoon core working hours. This change went a long way toward making scientific work more flexible. One group in particular that stands to benefit from this is all staff who have to balance their work with family responsibilities.

The availability of part-time positions is another important element of the family-friendly organization of work at the ifo Institute. In the year under review, the proportion of women among part-time staff slipped slightly from 69.4% to 68.8%. If doctoral students are excluded from this calculation, the proportion of women fell slightly to 80% compared to the previous year (86.3%). The ifo Institute will continue to offer and promote part-time employment to advance and achieve a positive work-life balance; in doing so, it aims to take an employee’s individual preferences into consideration as far as possible.

Other family-friendly aspects of work organization at the ifo Institute include the option of teleworking, the framework conditions for which 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. The intranet, relaunched in 2019, is not only constantly available to all telecommuters for remote working, but is also accessible for all staff on leave. In the future, staff on leave will be assigned a contact, a kind of “sponsor,” in their department who can keep track of information that concerns them and will help reintegrate them when they return. The idea is to make that reintegration as smooth and convenient as possible by offering customized options. When staff are on leave, the ifo Institute allows them to

**Family-friendly
working**

collaborate on projects at a reduced number of hours, should they so desire. ifo covers the costs of attending academic conferences during a staff member's leave, and will also cover the cost of childcare if necessary.

Gender-neutral language

Because language influences thinking, the ifo Institute implemented guidelines on gender-neutral language in fall 2019. In addition, the Institute's management aims to take appropriate action to raise awareness of gender equality issues among the staff.

More effort is to be given in the future to ensuring that due consideration is given to all genders when extending invitations to guest researchers and speakers. The contract studies service team, formed in 2019, systematically maps funding pools and contract-based funding explicitly aimed at female researchers and informs female employees about them.

Another contribution to equal opportunity at the Institute is that women are increasingly being appointed to ifo's various official bodies. In the Administrative Council, the Institute has little influence over this as the majority of seats are linked to an external function. Of the members elected to the Administrative Council, currently just under 43% are women. Of the twelve members of the Scientific Advisory Council, four are female academics. Two of the nine members of the ifo User Advisory Council are women, as are 15 of the 69 members of the ifo Institute Board of Trustees.

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. Its 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 its 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 2019 shows a surplus of 195,000 euros. This was channeled into reserves, increasing the Institute's assets to a total of 2.694 million euros as of December 31, 2019.

In 2019, the ifo Institute received public funds totaling 10.863 million euros as part of joint research funding based on Art. 91b of the Basic Law (German constitution). Of this amount, 10.548 million euros was used for current operations and 315,000 euros was used for investment. A cash balance from the previous year was not available to the ifo Institute in the 2019 financial year.

ASSETS AND FINANCES

The balance sheet total fell by 404,000 euros (-4.3%) versus the previous year to 9.061 million euros. On the asset side, this was due to the fact that within the floating assets, inventory rose by 162,000 euros and liquid funds rose by 1.600 million euros, while short-term receivables and other assets fell by 1.418 million euros. Accruals and deferred income decreased by 54,000 euros, while fixed assets also fell by 5,000 euros.

On the liabilities side, the Institute's assets increased by 195,000 euros. Down payments decreased (-373,000 euros) as did accruals (-344,000 euros). By contrast, there were increases in trade accounts payable (110,000 euros) and other liabilities (7,000 euros).

From the annual surplus of 195,000 euros cited above, 184,000 euros was channeled into research reserves, bringing the latter up to a total of 1.855 million euros by December 31, 2019. Voluntary payments beyond membership fees, which are managed by the ifo 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 totaled 839,000 euros. This increased the Institute's assets to a total of 2.694 million euros by December 31, 2019.

Liquid funds were available at all times throughout 2019. The stock of liquid assets fell by 1.600 million euros from the previous year's level to 5.548 million euros. Cash flow from current operations was negative (-1.521 million euros) in 2019, as was cash flow from investment activity (-79,000 euros).

Balance Sheet of the ifo Institute for 2019 in EUR Thousand (abridged version)

	Dec. 31, 2019	Dec. 31, 2018
Assets		
<i>Fixed assets</i>	76	81
<i>Current assets</i>		
Inventory	1,369	1,532
Receivables and accruals	2,068	704
Liquid funds	5,548	7,148
Total assets	9,061	9,465
Liabilities		
<i>Net worth</i>		
Earmarked funds	839	828
withdrawals/	0	0
additions	11	11
Research reserves	1,855	1,671
withdrawals/	0	0
additions	184	115
<i>Short-term debt</i>		
Reserves	3,536	3,879
Liabilities vis-à-vis banks	0	0
Down payments received	2,292	2,665
Other liabilities	539	422
Total liabilities	9,061	9,465

PROFIT AND LOSS STATEMENT

Operating income shrank by 530,000 euros compared to the previous year to reach a total of 18.597 million euros. A large part of that decrease was due to the reduction in public grants (-496,000 euros).

Income from contract-based activities, comprising earmarked subsidies, revenue from publications, database services, and events, income from contract studies (contract-based research), and other revenue, as well as the corresponding changes in inventory, decreased by 30,000 euros from 6.642 million euros in 2018 to 6.612 million euros in 2019.

The number of Society members fell from 314 in 2018 to 306 as of December 31, 2019. As a result, income from membership fees (obligatory and voluntary) decreased by 5,000 euros from 129,000 euros to 124,000 euros.

The slight reduction in third-party funding corresponds to a decline in the cost of materials and contract studies associated with third-party funding activities of 128,000 euros compared with the previous year.

Personnel expenses decreased by 318,000 euros (–2.3%) to 13.662 million euros. The main reason for this is the decrease in the average number of staff, down from 226 in 2018 to 214 in the 2019 financial year. Collectively agreed remuneration rose by 3.01% in 2019.

Regular depreciation (5,000 euros) refers to fixed assets financed out of the Institute's own funds, while unplanned depreciation (165,000 euros) corresponds to the investment subsidies for fixed assets received in the year under review from public research funding bodies. Other operating expenses (balanced by other operating income) fell by 103,000 euros to 2.942 million euros.

This means that income exceeded costs by 16,000 euros (income from current operations). Owing to negative interest rates, financial profit was negative at EUR –16,000. In addition, the Institute posted 118,000 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 26,000 euros, giving it an annual profit of 195,000 euros.

Joint research funding

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 Länder as part of joint research funding according to Art. 91b of the Basic Law. Institutional support from the Bavarian State Ministry of Economic Affairs, Regional Development, and Energy as well as from the Federal Ministry for Economic Affairs and Energy amounted to 10.863 million euros. In addition, there was a withdrawal of 256,000 euros from the repayment from the German federal and state retirement fund (VBL). Of the overall sum of 11.119 million euros in available funds, 10.635 million euros was used for day-to-day operations and 485,000 euros was spent on investments, including in forward-looking IT services and first-year licenses for new software.

Profit and Loss Statement of the ifo Institute for 2019 in EUR Thousand (abridged version)

	Dec. 31, 2019	Dec. 31, 2018
Public grants	11,860	12,356
Earmarked financial support	3,004	2,717
Obligatory membership fees	113	118
Voluntary membership fees	11	11
Income from publications, database services, conferences	240	380
Income from commissioned activities	3,400	3,203
Other revenues	124	118
Change in stocks of non-invoiced services	–156	224
Operating income	18,596	19,127
Expenditure for material and purchased services	1,706	1,834
Personnel expenditure	13,662	13,980
Regular depreciation	5	7
Unplanned depreciation	165	198
Other operating expenses minus income	2,918	3,045
Operating expenses	18,480	19,064
Operating profit	16	63
Financial profit	–16	–13
Taxes on income and profit	–26	–2
Neutral income and income unrelated to the accounting period	94	78
Annual profit	195	126
Withdrawals from research reserves	0	0
Additions to research reserves	184	115
Withdrawals from statutory reserves	0	0
Additions to statutory reserves	11	11
Profit brought forward	0	0

In addition to this basic public support, the Dresden Branch receives separate institutional support from the Free State of Saxony according to Art. 91b of the Basic Law. Institutional support of the Dresden Branch by the Saxon State Ministry of Finance amounted to 741,500 euros (of the 750,000 euros in funding originally granted, 8,500 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

- 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

- Fiscal federalism and local finances
- Evaluation of fiscal and taxation policy
- Government debt in Germany and Europe
- Political economy

Labor and Demographic Economics

Prof. Helmut Rainer, Ph.D.

- Economic uncertainty and the family
- Immigrant integration
- Social policy and domestic violence
- Social impact of environmental pollution

The Economics of Education

Prof. Dr. Ludger Wößmann

- Education and individual outcomes: Labor 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

Industrial Organization and New Technologies

Prof. Dr. Oliver Falck

- Competitiveness, institutions, and regulation
- Innovation
- Digitization
- LMU-ifo Economics and Business Data Center (EBDC)

Energy, Climate, and Resources

Prof. Dr. Karen Pittel

- Climate and energy policy: Efficiency, effectiveness and instrument design
- Energy system modelling and analysis of energy system transformation
- Resource markets: Dynamics and strategic behavior
- Environmental policy analysis and eco-industry

International Economics

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- Globalization and labor markets
- Trade costs and trade policy
- Trade and environmental policy

International Institutional Comparisons and Migration Research

Prof. Panu Poutvaara, Ph.D.

- 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 *CESifo Forum*

Executive Departments

Executive Support Staff

Personal Assistants:
 Susanne Crefeld
 Franca Fogli-Götz

Advisors:
 Dr. Wolfgang Auer
 Florian Dorn
 Barbara Hebele

Quality Management

Przemyslaw Brandt
 Stefan Sauer

Research Group Taxation and Fiscal Policy

Leader: Prof. Dr. Dr. h.c. Clemens Fuest

Dresden Branch

Prof. Dr. Marcel Thum
 (Director)

Prof. Dr. Joachim Ragnitz
 (Managing Director)

Central Departments

Human Resources and Law

Angela Wagner

Controlling/Equal Opportunity AGG

Dr. Dorothea Pohlmann

Data Protection

Dr. Thomas Wirth (external)

Library

Communications

Dr. Cornelia Geißler

Ombudsman

Prof. Dr. Heinrich Ursprung (external)