

ANNUAL REPORT 2016

// THE YEAR IN RETROSPECT

ZEW



ZEW ANNUAL REPORT

2016

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February 2016

THE GIFT OF LAUGHTER – ZEW STAFF SUPPORTS KLINIKCLOWNS

Laughter is good for you, releases positive energy and can promote the healing process. "Klinikclowns" (hospital clowns) are dedicated to ensuring that neither the very young nor elderly patients are deprived of laughter as they deal with serious illnesses. ZEW employees have mobilised to support their valuable work through a donation campaign for "xundlachen e.V." – the association of hospital clowns in the Rhine-Neckar district. Donations by the ZEW workforce of 445 euros to support the eleven currently active hospital clowns were awarded at ZEW on 17 February 2016. The funds will contribute to the association's work and support its mission to use humour and jokes to help sick persons and their families during the recovery process.



Above: Pedro Mayor de Frias and Andreas Martin (centre) from Verein xundlachen e.V. – hospital clowns in the Rhine-Neckar district receive ZEW's donation from Stefani Mintner, Stephan Reichert, Ilona Hanke and Steffi Spiegel (from left).

Below: Hospital clowns from xundlachen e.V. in action

ZEW Research Department head Professor Irene Bertschek gives a presentation at the Representation of the State of Baden-Württemberg to the EU in Brussels.



February 2016

ZEW LUNCH DEBATE IN BRUSSELS – FOCUS ON DIGITISATION

Digitisation is making rapid progress, thereby shaping the way in which people communicate. At the same time, information and communication technologies are being increasingly implemented in the workplace. The focus of the Lunch Debate, “Europe’s Digital Future: Prospects and Challenges”, which took place on 17 February 2016 at the Representation of the State of Baden-Württemberg to the European Union in Brussels, organised by ZEW, were the challenges posed to society, politics and the economy by the process of digitisation. Digitisation provides almost innumerable opportunities for new developments to take place. In her introductory lecture, Professor Irene Bertschek, head of the ZEW Research Department “Information and Communication Technologies” (now: “Digital Economy”), explained that one opportunity opened up by digitisation is the step away from mass production, towards the production of individualised products. The economist demonstrated that in Europe, numerous national and transnational plans for digitisation are being implemented. It is therefore necessary to concentrate on several key aims. Of central importance is the expansion of broadband, data protection, improving the economy’s ability to adapt to digitisation, and providing workers with training. In the subsequent panel discussion, Professor Irene Bertschek, Lucilla Sioli, PhD from the DG CONNECT at the EU Commission, and Laurent Zibell, PhD from the IndustriALL European trade union discussed, among other things, the impact of digitisation on the rights and securities of workers.

April 2016

EU RESEARCH COMMISSIONER ARGUES FOR A EUROPEAN CULTURE OF OPENNESS AND WILLINGNESS TO LEARN

According to Carlos Moedas, the EU Commissioner for Research, Science, and Innovation, Europe needs a number of traits to become more innovative, including an enhanced drive for experimentation, more flexible markets and greater willingness to learn from its global competitors. Moedas clearly outlined this position in his lecture in mid-April as part of the ZEW lecture series "First-Hand Information on Economic Policy". He emphasized that in the global tug of war, Europe did, indeed, have an excellent starting position, with the great conditions for research and development. But to achieve a successful and effective innovation policy, the European Union must augment its dialogue with firms and successful innovators, Moedas said. There is a need to improve the promotion of innovation through targeted partnerships with industry, Moedas argued, adding that Europe needs to resist protectionist reflexes and recognise that no nation, regardless of its size, can sustain competitiveness in a closed innovation model. The EU Commissioner urged the creation of a European Innovation Council, which would help develop targeted cooperation between government, universities, innovators, and financial backers.





First-Hand Information

Above: Carlos Moedas, EU Commissioner for Research, Innovation and Science, holds a talk as part of the ZEW lecture series "First-Hand Information on Economic Policy".

Left: Carlos Moedas with ZEW President Professor Achim Wambach (left) and ZEW Director Thomas Kohl (right)

June 2016

TAPES 2016 – FOCUSING ON THE SOCIAL INSURANCE SYSTEM

How can we optimally design health and disability insurance programmes? What are the incentivising effects of unemployment schemes and social insurance? How do family policy programmes impact birth rates? These were among the research questions on social insurance programmes addressed by theoretical and empirical papers presented at the 2016 Trans-Atlantic Public Economics Seminar (TAPES) in Mannheim.

TAPES 2016 was jointly organised by ZEW and UC San Diego. Beyond providing a forum for discussing research, the conference featured opportunities for network building and informal exchange, including a joint field trip by participants to the historic city of Heidelberg.

Every two years, the TAPES conference brings together some of the most prominent European and American researchers in public economics to discuss the current findings and promote networking. The conference was initiated by the National Bureau of Economic Research (NBER), the leading association of US economists.





Above: Professor Amy Finkelstein from MIT gives a talk on the effects of health insurance on expenditure in medicine.

Left: The roughly 30 participants in TAPES 2016 at ZEW in Mannheim

Trans-Atlantic Public Economics Seminar



Participants in the podium debate (from right): Christoph Weigler from Uber in Munich, ZEW President Professor Achim Wambach, President of the Federal Cartel Office Andreas Mundt, Julia Holz from Google and moderator Professor Thomas Fetzer from the University of Mannheim

July 2016

ZEW ECONOMIC FORUM 2016: MARKET POWER AND ABUSE OF POWER IN THE DIGITAL WORLD

Digitalisation makes it possible to intelligently link products, processes, and services along the entire value creation chain. While this development offers enormous growth potential, it also creates a level of market power that requires regulatory supervision. Does this imply the need for “new rules for the digital economy”? This was the question addressed at the 2016 ZEW Economic Forum, which brought together around 250 guests in Mannheim at the beginning of July.

Professor of Public Law, Regulatory Law, and Tax Law at the University of Mannheim, Thomas Fetzer, moderated the debate, which featured Julia Holz, competition director for the US internet giant Google; Andreas Mundt, President of the German Federal Cartel Office; Christoph Weigler, General Manager of online ride service provider Uber in Munich; and ZEW President Professor Achim Wambach. They discussed the opportunities and risks of the growing market power of a few large internet firms and the role of competition regulators in this area.

In his subsequent lecture, Professor Dietmar Harhoff, Director of the Max Planck Institute for Innovation and Competition, described various interconnections between the Internet, innovation, and competition.

Above: Professor Achim Wambach during his welcoming remarks at the ZEW Economic Forum 2016

Below: Professor Achim Wambach (left) receives the symbolic baton of the ZEW presidency from Professor Clemens Fuest (right) in the presence of Theresia Bauer (centre).



PASSING THE BATON AT ZEW: CELEBRATORY APPOINTMENT OF NEW ZEW PRESIDENT

The official inauguration of ZEW's new president took place at the 2016 Economic Forum. In the presence of Theresia Bauer MdL, Baden-Württemberg Minister of Science, Research, and Arts and Chair of the ZEW Supervisory Board, Professor Clemens Fuest passed the symbolic staff of office to the new ZEW President Professor Achim Wambach.

Wambach had earlier assumed the position of President of ZEW in April 2016, and the change of leadership was now officially celebrated at this ceremonial event. Along with his assumption of top leadership at the ZEW, Wambach also accepted the offer of a professorship in economics at the University of Mannheim.



July 2016

TWO YOUNG RESEARCHERS WIN THE HEINZ KÖNIG YOUNG SCHOLAR AWARD

In 2016 not one but two research papers were recipients of the Heinz König Young Scholar Award: the work of US researcher Nicholas Patrick Frazier from Rice University in Houston, Texas, and the work of Jan Tilly from the University of Pennsylvania in Philadelphia.

Nick Frazier's paper examines the amounts of additional wage compensation required for employees to accept uncertainties in working hours. His analysis shows that workers will accept a lower wage for a job with secure working hours. In his study of short-time work in Germany, Jan Tilly found significant effects on employment. His findings suggest that on average, it is possible to prevent the long-term loss of one job by placing five employees in short-time work.

The award, named in honour of the late founding director of ZEW, Professor Heinz König, recognises outstanding empirical papers by young researchers. It includes a 5,000 euro cash prize plus a several month's research stay at ZEW. This year's research prize was sponsored by Professor Wolfgang Franz, ZEW President from 1997 to 2013. The Heinz König Young Scholar Awards were bestowed at the conclusion of the 18th ZEW Summer Workshop for young economists, which focused on structural models for evaluating policy interventions.



Sharing the prize and the prize money: junior researchers Jan Tilly (centre) and Nick Frazier (right) with Professor Andreas Peichl, head of the ZEW Research Group "International Distribution and Redistribution", which this year prepared the ZEW Summer Workshop for young economists



Left: Professor Guy Michaels presents the results of his research on the influence of industrial robots on firm productivity.

Right: Junior Professor Verena Nitsch discusses the role of robotics in the future of employment with insights into the challenges faced when humans and machines work together.

September 2016

THE TASKS CONFERENCE – IMPLICATIONS OF DIGITISATION FOR WORKING WORLD

Digitisation is now a ubiquitous force in our working world. It simplifies work processes and makes it possible to work virtually anywhere and at any time. At the same time, it is leading to changes in qualification profiles and is often regarded as endangering jobs.

Against this backdrop, the Federal Institute for Vocational Education and Training (BIBB) and the Institute for Employment Research (IAB), together with ZEW, organised the fourth international TASKS conference in Mannheim. In early September, around 70 scholars from Germany and abroad came together to discuss the future of work and how the labour market is adjusting to digitisation.

Highlights of the conference included keynote lectures by Professor Guy Michaels and Professor Alan Manning, both of the London School of Economics, and by Junior Professor Verena Nitsch of Bundeswehr University Munich. At the end of the conference, the Mannheim firm Pepperl+Fuchs GmbH invited participants on a plant tour, giving them an opportunity to observe digitisation of the working world from a first-hand perspective.



Above: Professor Friedrich Heinemann (right) puts the concept of "European safe bonds" under the microscope in a debate with Professor Markus K. Brunnermeier (left).

Right: Professor Markus K. Brunnermeier gives a lecture on how to save the euro and the eurozone in front of around 250 guests.

First-Hand Information

October 2016

“EUROPEAN SAFE BONDS” – A PATH TOWARD GREATER FINANCIAL STABILITY IN THE EURO AREA?

Since 2009, Europe has been burdened by the European debt crisis and its aftermath. No solution appears in sight – at least not at the political level. However, Professor Markus K. Brunnermeier of Princeton University has proposed a pathway out of Europe’s financial woes through the creation of “European Safe Bonds” – or ESBies for short. As part of the ZEW lecture series “First Hand Information on Economic Policy”, Professor Brunnermeier discussed his proposal at the beginning of October in Mannheim. Brunnermeier’s ESB proposal would bundle government securities and carve them out into risk classes with higher risk “junior” bonds and lower-risk “senior” bonds. In this way, ESBies would halt the flight of capital from specific nations and instead enable investment in different classes of bonds. The proposal would reduce the risk of eurozone states defaulting on their debts while also ensuring greater financial stability for the eurozone. In a podium discussion moderated by ZEW President Professor Achim Wambach that took place after the lecture, Brunnermeier debated his proposal with Professor Friedrich Heinemann, head of ZEW’s Research Department “Corporate Taxation and Public Finance”.



October 2016

INTERNATIONAL STUDENTS VISIT ZEW

Around 20 international students at the University of Mannheim visited ZEW in mid-October 2016. Their visit took place as part of the University of Mannheim's International Office "Step-by-Step" pilot project, sponsored by the German Academic Exchange Service (DAAD).

Gunter Grittmann, head of the ZEW Service Department "Information and Communication", greeted the students and gave them an overview of the institute's work. ZEW human resources officer Ramona Liebhaber-Baghel informed the visiting students about professional career opportunities in research and at ZEW, including internships, collaboration as student assistants and doctoral programmes.

Afterwards, Francesco Berlingieri of the ZEW Research Department "Labour Markets, Human Resources and Social Policy" and Dr. Zareh Asatryan of the ZEW Research Department "Corporate Taxation and Public Finance" offered insights into their day-to-day professional activities.

International students of the University of Mannheim find out more about ZEW's research activities and about career opportunities in research and at ZEW.





October 2016

FIRMLY ROOTED IN MANNHEIM – ZEW PURCHASES INSTITUTE BUILDING

During its 2016 anniversary year, ZEW purchased its institute building in Mannheim. In early October, ZEW President Professor Achim Wambach and ZEW Director Thomas Kohl signed the purchase agreements at the notary's office.

In 1997, ZEW moved into the characteristic atrium building in L7, near Mannheim's central railroad station and in close proximity to the University of Mannheim. Today, the purchase of the building represents an important step for ZEW, as this location at the heart of Europe is exceptionally well-suited for an international research institute such as ZEW.

ZEW Executive Directors Professor Achim Wambach and Thomas Kohl sign the purchase agreement for the ZEW building in Mannheim's L7 Square.



February to October 2016

A STRONG PRESENCE IN BRUSSELS: SUCCESSFUL CONTINUATION OF THE ZEW LUNCH DEBATES

Among ZEW's key missions is to make a substantive contribution to resolving economic problems in Europe and to provide a sound and objective footing for policy debates. One instrument for accomplishing this mission is the ZEW Lunch Debates – a series of events in Brussels where members of the European Parliament, employees of EU institutions, media professionals, and representatives of interest groups regularly come together to have incisive discussions about current challenges facing Europe. The 2016 series was launched with a Lunch Debate on the question of how Europe should deal with the labour market changes emanating from the digitisation of the workplace.

Participants in the ZEW Lunch Debate “Chances and Risks of a European Underemployment Benefit Scheme” (from left): Dr. Mathias Dolls, deputy head of the ZEW Research Group “International Distribution and Redistribution”, Fabien Bell, PhD, member of EU Commissioner for Economic Affairs Pierre Moscovici’s cabinet, Torsten Arnswald, head of the General Division for Fiscal Policy at the German Federal Ministry of Finance, and László Andor, PhD, former EU Commissioner for Employment, Social Affairs and Inclusion and professor of economic policy at the Corvinus University in Budapest. The debate was moderated by economics journalist Mithreyi Seetharaman.





www.zew.de/AM4244-1

17 February

DESIGNING EUROPE'S DIGITAL FUTURE

Asian and US firms are dominating the move toward digital change. To improve Europe's competitiveness, the EU Commission has created the "Digital Agenda for Europe". In her inaugural lecture, ZEW economist Professor Irene Bertschek examines the challenges facing society, government and the economy in this area.



www.zew.de/AM4488-1

15 June

ACHIEVING STABILITY

Is it possible to have a European Capital Markets Union without the practical implementation of a banking and fiscal union? This question was the focus of a discussion between (from left to right) Professor Sascha Steffen (ZEW), Natacha Valla from the European Investment Bank, Rolf Strauch, Chief Economist of the European Stability Mechanism (ESM), and Niall Bohan of the EU Commission's DG FISMA. The discussion was moderated by journalist Laura Noonan.



28 September

EUROPE AFTER BREXIT

Debating the future of the EU after the Brexit decision were (from left to right) European Parliamentarian Sylvie Goulard, ZEW economist Professor Friedrich Heinemann, EU Delegate Peter Simon, Professor Pierre Boyer of the École Polytechnique, and ZEW President Professor Achim Wambach in the presence of around 140 high-ranking representatives from the EU Parliament, the EU Commission, and from firms and interest groups.



20 October

A NEW EUROPEAN UNEMPLOYMENT INSURANCE

Dr. Nicole Hoffmeister-Kraut, Baden-Württemberg State Minister for the Economy, Labour and Housing opened the Lunch Debate with her keynote speech on the topic, "Opportunities and Risks of a European Unemployment Benefit Scheme". Afterwards, representatives from business and government discussed the implications of a common European unemployment scheme.



www.zew.de/AM4842-1



www.zew.de/AM4876-1

November 2016

ZEW BIDS FAREWELL TO MEMBERS OF THE SCIENTIFIC ADVISORY COUNCIL

In mid-November, ZEW President Achim Wambach and Director Thomas Kohl said good-bye to six long-standing members of the Scientific Advisory Council. Former ZEW President Professor Wolfgang Franz gave a laudatory address in praise of the outstanding service of the voluntary Council members, with whom he had worked closely for many years. Also celebrating their departures were Professor Friedrich Buttler, retired State Secretary in the Brandenburg State Ministry of Science, Research, and Cultural Affairs and former chairman of the Scientific Advisory Council; as well as the recently deceased Professor Arnold Picot, former chairholder of the Institute for Information, Organization, and Management at the Ludwig Maximilian University of Munich and former vice-chair of the Scientific Advisory Council.

Other Council members honoured at the farewell festivities were departing Professor Michael Heise, Chief Economist of the Allianz SE; Professor Gebhard Kirchgässner of the Swiss Institute for International Economics and Applied Economic Research (SIAW) of the University of St. Gallen, who sadly passed away in April 2017; Professor Bertram Schefold, professor of economics at Goethe University Frankfurt a. M.; and Dr.-Ing. E.h. Manfred Wittenstein, Chairman of the Board of the Wittenstein AG.



Earlier, in the spring of 2016, Professor Dieter Hundt, former President of the Confederation of Federal Employers Organisations (BDA), had retired from the Scientific Advisory Council. Professor Hannes Rehm, past Board Chairman of Nord/LB and spokesperson for the Financial Market Stabilisation Fund (SoFFin) had left the Council in May 2016.

As an advisory body, the Scientific Advisory Council is closely involved in developing ZEW's research endeavours. In addition, it reviews and approves all ZEW projects financed with core funding.

Right: Professor Achim Wambach (right) and Thomas Kohl (left) show their gratitude to Professor Friedrich Buttler (centre) for his many years of service as chair of the ZEW Scientific Advisory Council.

Left: The ZEW Board of Executives along with the former ZEW president bid farewell to the departing council members. From left to right: Professor Arnold Picot (†), Thomas Kohl, Dr.-Ing. E.h. Manfred Wittenstein, Professor Dieter Hundt, Professor Friedrich Buttler, Professor Bertram Schefold, Professor Achim Wambach, Professor Michael Heise, Professor Wolfgang Franz





Key players in the ZEW success story (from left to right): Professor Friedrich Buttler, Dr. Alexander Selent, Professor Wolfgang Franz, Professor Kai Hüschelrath, Professor Irene Bertschek, Dr. Georg Licht, Thomas Kohl, Theresia Bauer MdL, Professor Achim Wambach, Professor Ernst-Ludwig von Thadden, Ernst-O Schulze, Professor Otto H. Jacobs.

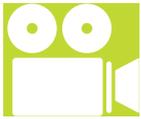
December 2016

ANNIVERSARY CELEBRATIONS AT ZEW – 25 YEARS OF EXCELLENCE IN RESEARCH AND POLICY ADVISING

In early December 2016, ZEW celebrated its 25th birthday. Around 300 guests, including friends, supporters, pioneers, former researchers and partners of the institute were invited by the ZEW Board to celebrate a quarter century of excellence in research and policy advising at ZEW. In his welcoming remarks, ZEW President Professor Achim Wambach laid special emphasis on the institute's international and specifically European orientation. In her address, Baden-Württemberg Minister of Science and Chairwoman of the ZEW Supervisory Board Theresia Bauer MdL, stressed that ZEW had always involved itself in social and economic policy debates, and contributed to their objectivity. Dr. Alexander Selent, Chairman of the ZEW Sponsors' Association for Science and Practice, and Professor Ernst-Ludwig von Thadden, President of the University of Mannheim, praised the many years of trusted collaboration with ZEW in their welcoming speeches. Concluding the event, Professor Wolfgang Franz, who led ZEW from 1997 to 2013, reviewed important milestones in the institute's history before turning to the challenges facing ZEW today and in the future.



25



ZEW
PROMOTIONAL
VIDEO

▶ https://youtu.be/al0SEg0_SJk

Above: Theresia Bauer MdL, Minister for Science, Research and the Arts in Baden-Württemberg, praised ZEW's scientific excellence as well as the institute's dedication to presenting its research findings to the public.

Centre: In his lecture, Professor Wolfgang Franz compared the work of research institutes, especially that of ZEW, to guiding a ship between Scylla and Charybdis, two sea monsters from Homer's The Odyssey.

Below: The academic part of the event involved a discussion of the global decline in productivity growth. Taking part in the debate were (l-r) Professor Achim Wambach, Dr. Georg Licht, Professor Irene Bertschek and Professor Kai Hüschelrath.



25 Years of ZEW



EDITORIAL

// LETTER FROM THE EUROPEAN COMMISSIONER FOR
RESEARCH, SCIENCE AND INNOVATION

// LETTER FROM THE EXECUTIVE DIRECTORS

// INTERVIEW WITH PROF. ACHIM WAMBACH, PHD

EDITORIAL

GREETING LETTER FROM CARLOS MOEDAS, EUROPEAN COMMISSIONER FOR RESEARCH, SCIENCE AND INNOVATION



The challenges and opportunities set out in President Juncker's White Paper highlight what is at stake for the future of Europe.

There is no doubt that European science and innovation will be among our most powerful tools to meet these challenges and to help identify and seize future opportunities. Yet, if we want to remain at the cutting edge of fundamental research and breakthrough innovation, we need to fully embrace 'openness' and strengthen the role of evidence-based policy making.

Openness can be many things – take inclusion for example. What started in the scientific community as a drive for open access and open data can expand far beyond that to include citizen science, the integration of local communities into global networks, and the ability of digital technology to transform our homes and workplaces. This is a world where anyone, living anywhere can be an innovator.

Openness also means experimentation. Experimentation is the very heartbeat of science and innovation. It is often said that Europe is an old continent. Yes, we have a rich heritage of shared cultural values – but this does not mean we are bound by the traditional way of doing things. We need to be flexible and move with changing times. To do this we must stand on solid foundations as we make the choices which will shape our destiny for years to come. Robust science and rigorously evaluated evidence provide the cornerstone for this.

Now, more than ever, we need to strengthen scientific advice and its role in policy making at all levels. Independent advice, based on leading knowledge and evidence, is essential to shape our response to some of the challenges we currently face; populism, post-truth notions and euro-skepticism. These aim to undermine the role of evidence and our proper understanding of social, economic and scientific issues.

Europe can lead the way. The European Commission has already taken important steps to strengthen evidence-based policy, notably with our Better Regulation approach. And its Scientific Advice Mechanism (SAM), created in 2015, is now a key contributor to better policy making. A core group of seven independent eminent scientists heads the SAM initiative, but they do not work alone. They draw on the expertise of around a hundred

individual scientific academies across Europe represented at the European level by the European Academies partnership.

In the two years since it was created, SAM has delivered substantive and representative scientific advice to EU policy makers on the measurement of carbon dioxide emissions from light vehicles and on cybersecurity. Moreover, SAM, in collaboration with the European Academies, is also producing a series of explanatory notes which tackle emerging issues.

It is still only the beginning, but we are showing that transparent, timely and relevant scientific advice, tempered by an understanding of broader societal needs and aspirations, gives real direction to policy making.

Openness and excellence-based policy making are two things championed by ZEW. I was reminded of this more than ever in 2016 when ZEW celebrated its 25th anniversary. In the last quarter of a century ZEW has demonstrated outstanding scientific endeavor and collaboration as exemplified in its leadership of the Strengthening Efficiency and Competitiveness in the European Knowledge Economies (SEEC) programme. This initiative, which brings together researchers from Europe, North American and Asia, is a great example of openness.

Of course the successes of ZEW over the past twenty five years would not have been possible without the dedication, motivation and experience of the institute's staff. And so ZEW's 25th anniversary is also a celebration of the people who make ZEW what it is today. I look forward very much to your continued contribution to European knowledge and European success stories as we walk forward together into the future of Europe.



Carlos Moedas
European Commissioner for Research,
Science and Innovation

LETTER FROM THE EXECUTIVE DIRECTORS



Prof. Achim Wambach, PhD
President

Thomas Kohl
Director

Reminiscing on the past business year, three events stand out: the appointment of a new ZEW president; the evaluation conducted by the Leibniz Association; and the festivities held to mark the 25th anniversary of ZEW. In this eventful year ZEW once again demonstrated its strengths, laying the groundwork for a propitious start to 2017.

In retrospect, the appointment of a new president in April 2016 was an event of key significance. The inaugural celebration held to welcome Professor Wambach featured a number of guest speakers, including Theresia Bauer, Minister of Science, Research and the Arts of Baden-Württemberg, as well as friends and associates from the realms of academia, politics and business.

The arrival of Professor Wambach as president has lent fresh momentum to our research activities. For example, the new “Market Design” Research Group is investigating the features that characterise well-designed markets and institutions. The Group, which is an excellent complement to our research mission, will further enhance our reputation while also honouring our tradition of using innovative methods to perform cutting-edge analysis.

Another important event last year was the evaluation of our activities performed by the Leibniz Association. ZEW received excellent marks in this external evaluation, which is conducted on a recurring basis at least every seven years. In its report, the Leibniz Association particularly praised the excellent quality of ZEW's research and policy advising activities, including its valuable contributions to current debates in economic policy. We would like to expressly thank ZEW's employees for making the evaluation such a success. The praise we have received from the Leibniz Association has fortified our commitment to continuing our successful work in the years to come. In particular, we intend to strengthen our work in the international arena.

A third event of particular significance last year was the 25th anniversary of ZEW's founding. We have developed an excellent international reputation over the past quarter century, establishing ourselves as an important player in the German and European research landscape. To celebrate this success story, we held a festive anniversary event, attended by some 300 people.

A milestone of particular note during the anniversary year of 2016 was ZEW's purchase of the building in which the institute is housed in Mannheim's inner city. The building, which features a large atrium, has been ZEW's home since construction was completed in 1996. The building's location offers excellent conditions for our work thanks to the local availability of public transportation as well as the close proximity of the banking and finance centre of Frankfurt and the universities of the Rhine-Neckar region, including the universities of Mannheim, Heidelberg and Karlsruhe.

Our geographic location in the heart of Europe is symbolic for the strong European focus of our research. And recent political events have greatly underscored the importance of these research activities. In 2016, we examined a number of salient and topical issues – including the European debt crisis, Brexit, the refugee crisis, and the dangers of economic protectionism – presenting evidence-based findings that made a constructive contribution to public debates. ZEW's role as an opinion leader in Europe was spotlighted by various events and activities, including the 2016 ZEW Lunch Debate on the future of Europe after Brexit; the talk given at ZEW by EU Commissioner for Research, Science and Innovation Carlos Moedas on innovation competition in Europe; and our field research into the economic integration of refugees.

However, the steady expansion of our international activities is not confined to Europe, but is taking place on a global scale. In 2016, for example, we hosted the Trans-Atlantic Public Economics Seminar (TAPES), one of the world's most important conferences in public economics. TAPES was initiated by the largest economics research organisation in the US, the National Bureau of Economic Research (NBER). The 2016 conference was devoted to the topic of "Social Insurance Programs", and attracted such luminaries as Professor Sir Richard Blundell of University College London, Professor Martin Feldstein of Harvard University and Professor Amy Finkelstein of MIT.

While ZEW hosted a number of notable conferences and academic events in 2016, its status as a leader in the German research landscape was also prominently spotlighted by the research activities and publications of its staff members. Between 2014 and 2016, ZEW researchers published a total of 244 papers in peer-reviewed journals. One must also draw attention to the 430 talks given by ZEW researchers in the period under report at national and international conferences, as well as the 230 research projects that were conducted at the institute.

ZEW's Scientific Advisory Council deserves recognition for the institute's high-quality scientific output, as it plays an important role in identifying research topics and in setting ZEW's strategic orientation. In 2016, several members of the Scientific Advisory Council took leave from the committee, and they must be commended for their services. We would like to particularly thank Professor Friedrich Buttler, a former state minister at Brandenburg's Ministry of Science, Research and Culture. As the former chair of the Scientific Advisory Council, he placed his considerable diplomatic skills in the service of the institute over a great many years. In advising the institute, he consistently kept ZEW's best interests in mind. We would also like to extend heartfelt thanks to the recently deceased Professor Arnold Picot, who showed great commitment in supporting ZEW over the years as the vice-chair of the Scientific Advisory Council. Our gratitude also goes to several other members who took leave from the Scientific Advisory Council: namely, Professor Michael Heise, Professor Bertram Schefold, Dr.-Ing. E.h. Manfred Wittenstein, Professor Dieter Hundt, Professor Hannes Rehm, and Professor Gebhard Kirchgässner, who sadly passed away in April 2017.

Recognition is also due to the State of Baden-Württemberg, the German federal government and the members of the ZEW Sponsors' Association for Science and Practice for their ideas and financial contributions. The ZEW Sponsors' Association for Science and

Practice is an association of companies and individuals that makes various contributions to ZEW's activities. For example, it supports the organisation of the conference series "First-Hand Information on Economic Policy", which in 2016 once again garnered the participation of notable speakers such as Professor Christoph M. Schmidt, Chairman of the German Council of Economic Experts, and Professor Markus K. Brunnermeier of Princeton University.

In closing, we would like to thank ZEW's staff. Their commitment and expertise is the reason why ZEW can look back on an extremely successful year. Furthermore, our future success will hinge on their dedication. We are looking forward to the next 25 years!

Mannheim, July 2017



Prof. Achim Wambach, PhD
President



Thomas Kohl
Director

INTERVIEW WITH PROF. ACHIM WAMBACH, PHD



Brexit is here to stay. The United Kingdom is leaving the EU, and cutting its close ties with Europe built over decades. What does this mean for the EU and its Member States?

ACHIM WAMBACH

▶ The referendum showed that we have failed to persuade large segments of the population that a return to nationalist ideology and policies is not the solution to the world's current problems. Many who voted for Brexit hoped to prevent the supposedly paternalistic dictates of lawmakers in Brussels. Others were motivated by fear of competing with immigrants for jobs. However, it remains unclear whether Brexit is an expedient solution to the problems perceived by its supporters. Precisely for this reason, the EU must use this opportunity to demonstrate that bringing nations together in collaborative frameworks is a more effective way to solve the problems we all face than a unilateral, nationalist approach. I believe achieving that goal will require permitting a multi-speed Europe or, to put it in less judgmental terms, a Europe of "variable geometry".

If Member States do not all take the same steps at the same time, what is the advantage for the EU?

ACHIM WAMBACH

- ▶ The advantage for the EU is that it can implement policies at the multinational level more efficiently and effectively than is feasible on the national level. For example, creating a single European market benefitted all the EU Member States. Similar successes could result from a common approach to the refugee crisis, foreign policy, defence and combating crime or terrorism. But since there are significant differences of opinion among the Member States about these issues, unanimous decisions are unlikely. To avoid deadlock on these controversial issues, the EU should be given the flexibility to allow some Member States to implement common policies before others. If these common policies are successful, the other Member States will eventually join in. This would allow projects to go forward even when they do not have unanimous support, preventing them from languishing for years in negotiations. The EU would then have the vigour and dynamism it urgently needs to solve today's problems. Particularly in the current environment, this would also have the advantage of refuting the claim that Brussels is dictating policy to the Member States. Each national government could individually decide whether to cooperate on a specific policy or not, thus augmenting their sovereignty.



Beyond triggering discussions concerning the reform of the EU, Brexit has also resulted in a large number of practical problems. Where is action required?

ACHIM WAMBACH

▶ The exit negotiations initiated this year present an enormous range of challenges. The United Kingdom's exit from the EU will affect the common market, change burden-sharing in the EU budget and end the free movement of labour between the United Kingdom and EU Member States. These changes will require new regulations. Aside from these obvious changes, Brexit will also have an impact in areas less visible to the general public but that significantly influence companies. These include corporate taxation, intellectual property and trade mark rights. But Brexit will also shift the balance of power within the EU. The forces of market liberalism will be weakened, and statism will gain ground. These changes could have an impact on antitrust regulations, digital single market policy, cooperation in energy markets, and climate policy.





What are the corporate taxation issues with Brexit?

ACHIM WAMBACH

- ▶ Brexit could significantly increase the burden of cross-border taxes on companies, especially for internal company transactions. Taxation at source on dividends, interest and royalties that had been significantly reduced in the EU single market may now have to be paid in full again. In addition, the loss of fundamental EU freedoms may expose companies in the United Kingdom to discriminatory taxation. Finally, additional tax burdens may be imposed on the United Kingdom as a non-Member State.

The additional burden placed on the EU budget by the United Kingdom's exit is a concern for the citizens of EU Member States.

ACHIM WAMBACH

- ▶ ZEW's estimates for 2014 show that the EU's budget deficit would have been 7.1 billion euros without the United Kingdom. The additional burden placed on the individual Member States will therefore be relatively small. But it is still a politically sensitive issue. As a result, careful determination of which expenditures actually benefit Europe and cutting expenditures where no benefit can be demonstrated is essential. This could significantly reduce the additional burdens on the Member States.

**You believe that Brexit poses a threat to intellectual property rights.
What are these threats?**

ACHIM WAMBACH

- ▶ The continued validity of intellectual property and trademark rights after Brexit is a serious issue. The introduction of EU-wide brands in 2016 – so-called EU trade marks – was a major advance that considerably simplified the protection of industrial property rights. New products and services registered as European Union trade marks are protected from imitation across the entire single EU market. European Union trade marks may now lose those protections in the United Kingdom because of Brexit. Companies might be required to register their brands separately in the United Kingdom in time to avoid these risks. The same is true for EU-registered designs. The importance of this issue largely depends on whether transitional provisions can be successfully negotiated. Even a short time without these protections can result in significant costs for companies. Otherwise, third parties could quickly grab up brand and design rights, or flood the market with generic copy-cat products. Without brand protection, taking action against these parties could prove extremely difficult.



The EU's energy and climate policies are closely linked. What effect will the United Kingdom's exit have on this area of common policy?

ACHIM WAMBACH

- ▶ Closely linked energy and climate policies are as important to the United Kingdom as they are to the EU. The United Kingdom is closely integrated into the European energy market, including the crude oil, natural gas and electricity markets. The short-term trading of gas and electricity over very small periods is common. Trade restrictions on these markets will worsen the supply situation for all participants. As the second largest emitter of greenhouse gasses in the EU, the United Kingdom has also played a crucial role as an advocate of cost and goal-oriented climate policy. If the country's climate policy remains ambitious after Brexit, it will have a strong interest in continuing to participate in EU emissions trading. In the exit negotiations, an agreement on energy and climate policy should be reached quickly. This will avoid regulatory uncertainty on the market and minimize costs for companies as well as consumers.

Many voters supported Brexit because they feared job competition from immigrants from other EU countries. How will the United Kingdom be affected by the lack of free movement of labour with the EU?

ACHIM WAMBACH

- ▶ That depends on the results of the negotiations. Millions of British citizens currently live and work outside of the United Kingdom. Their interests as well as the interests of EU citizens working in the United Kingdom must be taken into account. After Brexit, EU workers may need a work visa to take a job in the United Kingdom. Immigration will fall. The amount will depend on how high the qualification and income hurdles are set for obtaining a work visa. EU immigration to the United Kingdom in recent years has had a positive effect on the economy there. Reduced immigration will therefore burden public finances. Certain industries such as the hotel and restaurant sectors may also have difficulties finding qualified workers.



ABOUT US

// THE INSTITUTE

// THE RESEARCH UNITS

ABOUT US

ZEW IN BRIEF

The Centre for European Economic Research (ZEW) in Mannheim was founded in 1991 and is a member of the Leibniz Association. Under the leadership of Professor Achim Wambach, PhD, the President of the institute, and Thomas Kohl, the institute's Director, ZEW currently employs a staff of approximately 190 in six research departments, three research groups, and three service departments. Being one of the leading German economic research institutes, ZEW enjoys an excellent international reputation.

Mission

- The mission of ZEW consists of four closely related key objectives:
- to conduct high-quality research,
- to provide science-based economic policy advice
- to train up-and-coming researchers,
- to transfer knowledge to the public.

Research Mission

ZEW's overriding aim is to investigate the "optimal performance of markets and institutions in Europe". Studies carried out by ZEW concern the framework of market processes which improve the performance of sustainable, efficient and inclusive knowledge-based economies in Europe.

This impacts the core research activities pursued at ZEW, for example:

- securing employment and income against the backdrop of demographic change,
- business formation and innovation policy in global competition,
- use of information and communication technologies in companies,
- integration of financial markets in Europe,
- sustainable strategies for international climate policy,
- viable national and European fiscal policy,
- economic effects of tax and transfer systems,
- improving the performance of existing markets,
- competitive strategies and regulatory policy at the European level.

ZEW's profile is characterised by theoretically grounded methodologies in empirical economic research. The studies carried out at the institute draw on techniques and methods from economics and business administration. Research at ZEW is open to engage in interdisciplinary cooperation and adopt new perspectives.

Unique Characteristics

Although ZEW is closely networked with universities and applies university level standards in its research activities, the work carried out at the institute is clearly different from the research at economics faculties. ZEW places much greater emphasis on providing policy advice and on the transfer of knowledge beyond a specialist audience. Furthermore, ZEW is the only economic

research institute in Germany offering a comprehensive programme of seminars and courses with the objective of providing further training for specialists and executive staff.

Thanks to its considerable size and the broad spectrum of research areas, ZEW is able to tackle extensive and complex tasks in the field of economic policy advising. The infrastructure of ZEW also facilitates the development and maintenance of complex analysis models such as the European Tax Analyzer or the Computable General Equilibrium Model PACE (Policy Analysis based on Computable Equilibrium). In addition, ZEW is able to undertake long-term surveys and build extensive databases. The maintenance of datasets like the ZEW Financial Market Survey and the Mannheim Innovation Panel relies on the unique conditions provided at ZEW.

Networking with Universities

ZEW cooperates closely with a large number of universities in Germany, Europe and across the world. An integral part of ZEW's university network is the close contact which the institute maintains with universities in the Rhine-Neckar Metropolitan Region. The institute has a long history of cooperation with the universities of Mannheim and Heidelberg, which includes sharing resources for doctoral study programmes.

Through cooperation with various German and international universities, ZEW supports the qualification of the next generation of researchers in economics. In particular, ZEW collaborates with universities within the scope of projects funded by research foundations. The institute is involved in one Collaborative Research Centre, one Research Unit and in two Priority Programmes of the German Research Foundation (DFG).

ZEW is currently collaborating with over 90 Research Associates, most of whom are professors at German or international universities. ZEW's Research Associates contribute to the work completed in the institute's research units. Many ZEW researchers hold teaching positions at universities. The ZEW Visiting Researchers Programme promotes scholarly exchange as academics from around the world are invited to complete a research residency at the institute.

The institute's successful work is reflected not least in the fact that many ZEW researchers are appointed professors or junior professors at universities. In 2016, ZEW researchers accepted professorships at the universities of Mannheim, Luxembourg and Cologne, as well as at the Frankfurt School of Finance & Management and the University of Applied Labour Studies of the Federal Employment Agency in Mannheim. In the past few years, researchers have also accepted professorships at the universities of Erlangen-Nürnberg, Heidelberg, Georgia Tech, US, and a number of other universities.

RESEARCH PERFORMANCE

Research excellence at ZEW has various dimensions:

- publishing research findings in scientific journals,
- establishing international networks with research institutions,
- participation in exchange of knowledge by way of conferences, workshops, and research visits,
- development, maintenance and evaluation of unique databases.

Publications

The publication of research findings in international journals, subsequent to an external referee process, is a key indicator of the quality of research carried out at any research institute. Successful publishing is therefore a major objective of the institute. ZEW has an outstanding publication performance, contributing to its leading position among the German economic research institutes. Between 2014 and 2016, a total of 244 articles produced by ZEW researchers were selected by external referees for publication in scientific journals. It is not only a small, select group of top researchers, but a great number of ZEW economists who contribute to the publication success of ZEW.

Cooperation Partners

Close cooperation with research institutions in Germany and abroad is a decisive factor for the success of ZEW's research. ZEW maintains partnerships with German and international universities and with non-university research institutions. Great value is placed on the international scope of the network, but also on its interdisciplinary nature.

ZEW collaborates with distinguished partners located in Europe and, increasingly, in North America and Asia. A prime example of such partnerships is the collaboration with the University of International Business and Economics (UIBE) in Beijing. This partnership has become even more substantial since the signing of a cooperation agreement in 2015.

Scientific Events

Another important means of establishing cooperative ties is scientific exchange through conferences and workshops. In order to ensure that the institute's research is communicated effectively to target audiences, ZEW organises numerous conferences which focus on a variety of topics.

In 2016, ZEW's research units organised more than 45 conferences and workshops. These events attracted hundreds of international participants. In the reporting year, ZEW researchers delivered more than 430 presentations at scientific conferences.

International conferences provide ZEW with the opportunity to extend its reputation as a research institution and employer. The institute is therefore represented at important international conferences with information stands, for example at the annual conference held by the Verein für Socialpolitik (VfS) and at the ASSA meetings held in the United States

Development and Maintenance of Research Data

In most cases, empirical research carried out by ZEW is based on individual-level data. Thanks to its established infrastructure, ZEW is able to collect, process and assess data according to recognised scientific standards.

Where possible, the institute provides interested external researchers with access to data at the ZEW Research Data Centre (ZEW-FDZ). The Research Data Centre, which has been accredited by the German Data Forum, constitutes yet another contribution to the extension of scientific infrastructure by ZEW. The data made available in the ZEW-FDZ may generally be used free of charge for scientific, non-commercial research purposes. A proportion of the data is made

ZEW | **FDZ**
ForschungsDatenZentrum

available in the form of anonymised Scientific-Use-Files. With more than 340 external users, the most frequently used Scientific-Use-File is the Mannheim Innovation Panel. Selected data is also available in the form of Education-Use-Files applicable for educational or teaching purposes.

QUALIFICATION OF STAFF

The promotion of talented researchers is a core aim of ZEW. ZEW thus offers its staff a comprehensive range of further training opportunities.

Two Pathways to a Doctoral Degree

At ZEW, promoting postgraduate education is considered to be the key to supporting the growth and development of the next generation of researchers in economics. Two-thirds of the research staff employed at ZEW are university graduates who are working on a dissertation. Whilst completing their thesis, doctoral candidates also benefit from first-hand involvement in the research activities at ZEW. Following completion of a doctorate, a good proportion of the researchers pursue a career in the private sector, in associations or in government institutions. Academically outstanding doctoral graduates are given the opportunity to continue their career as post-doctoral researchers at ZEW. So far, many of these have gone on to qualify as professors and have been appointed to university teaching posts. The institute is currently employing around 50 doctoral candidates.



In order to meet the requirements of the wide range of research interests and the diverse personalities of the researchers themselves, doctoral programmes are carried out within an open framework. University graduates who begin their academic career at ZEW can attain their doctoral degree by taking one of two pathways:

- They may work full-time as a researcher in a ZEW research unit, or
- else they may participate in the ZEW Doctoral Studies Network (ZEW DocNet).

Most commonly, doctoral students will choose to participate in research projects at ZEW whilst completing their doctorate. Together with the heads of the ZEW research units and experienced senior researchers, the doctoral candidates work on their dissertations during the course of research project work. Once the topic of the doctoral thesis has been decided upon, a supervisor will be found at a German or at a foreign university.

With the ZEW DocNet, ZEW offers a second pathway for doctoral students. Within this international network, ZEW participates in the graduate programmes offered at universities both in Germany and abroad. Thanks to this cooperation, the institute has become even more attractive for promising young scientists. In the year under report, a total of six doctoral students took part in the programme. Graduates choosing to join the ZEW DocNet programme must first apply for a doctoral programme at a participating university. The doctoral programmes take place in full at the chosen university. The graduates then begin working on projects, either on a full- or part-time basis, at ZEW. Their connection with the institute remains flexible.

Structured Qualification for Doctoral Candidates

Since 1 March 2015, the standards of ZEW's structured qualification programme apply to university graduates who have newly joined the institute. ZEW facilitates a consistent, scientifically challenging and attractive qualification in applied economic research for all doctoral candidates, independent from the manifold doctoral regulations of the respective universities. The doctoral courses that have to be completed during the programme will be validated with credit points according to the European Credit Transfer and Accumulation System (ECTS). The ZEW qualification programme includes participation in a graduate school and in doctoral courses at the university, obligatory and elective field courses, as well as soft skill courses at ZEW.

Qualification Programme

ZEW helps to advance the careers of its staff by means of a qualification programme. The qualification programme takes a variety of forms, including:

- temporary release from project responsibilities at ZEW in order to complete one's own research ("Sabbaticals"),
- extended research stays at external research institutions,
- participation in seminars, doctoral colloquia, and summer schools,
- mentoring from the heads of research units, senior researchers and Research Associates,
- ZEW Econometrics Qualification Programme.

All academic staff have access to the comprehensive internal qualification programme offered by ZEW. Alongside courses in econometrics, the programme also includes IT courses as well as courses in project management, foreign languages and soft skills.

Further Training of Staff in Service Departments

The further training of staff in the ZEW service departments is of crucial importance for the research conditions at the institute. ZEW provides numerous further training opportunities. In addition to further training in their own field, staff members have access to English courses taught by native speakers.

ZEW offers up to nine positions for vocational training and study. Apprenticeship positions are available in the areas of digital and print media design, office management with an additional qualification in foreign language correspondence, as well as project assistance and IT management with specialisation in systems integration. Positions are also made available in cooperation with the Baden-Württemberg Cooperative State University in the "Business Information Systems" Bachelor of Science and the "Online Media" Bachelor of Arts courses. Personal advisers mentor apprentices during their technical or administrative training periods at ZEW. In the "Information and Communication" Service Department, ZEW also offers two trainee positions in the areas press and public relations and online communications.

Student Assistants and Interns

ZEW also familiarises students with empirical research methods. The institute employs a large number of student and research assistants as well as interns who study at the nearby universities. The students are given an initial opportunity to apply the theoretical and methodological knowledge acquired during their studies in practical research. In 2016, a total of 40 Bachelor's and Master's theses were completed by students under the supervision of ZEW staff members.

ECONOMIC POLICY ADVICE

One of ZEW's key objectives is to provide economic policy advice based on rigorous economic research. Policy advice is provided for the areas of administration and politics on a national, regional and European level, as well as for associations and international organisations.

Policy Advice Instruments

The research-based economic policy advice provided by ZEW takes a number of different forms:

- scientific studies and reports carried out on behalf of public bodies,
- participation of ZEW researchers in parliamentary discussions, formal advisory talks with parliaments, government agencies and the European Commission,
- membership of ZEW researchers in political advisory boards,
- consultations with representatives of the European Commission and government agencies, with members of parliament and decision-makers in administration,
- participation in public debates on economic policy via media and events.

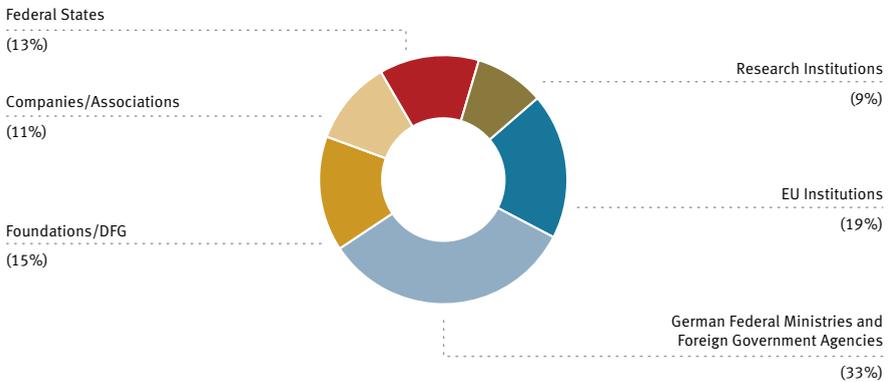
Science-Based Economic Policy Advice

Policy advice provided by ZEW complies with rigorous scientific standards and is based on research data. Providing policy advice is hence not only the task of a specialised group of advisers, but the responsibility of all ZEW researchers. The completion of studies, which form the basis of the policy advice provided by ZEW, and the publication of academic papers are inseparable; policy advice and research compliment each other. Any knowledge won from research is immediately taken into account for policy advising. This concept provides economic policy-makers with a guarantee of the scientific quality and balanced nature of ZEW's advising activities.

Client Structure

In 2016, the institute’s third-party funding amounted to 8.2 million euros. The most significant clients, making up approximately 46 per cent of the ZEW client base, are German and foreign government agencies, followed by institutions forming part of the European Union (19 per cent). The share of foundations, including the German Research Foundation (DFG), as well as businesses and associations amount to 15 and 11 per cent respectively. With a proportion of nine per cent, research institutions also play a significant role.

SOURCES OF THIRD-PARTY FUNDING IN 2016



KNOWLEDGE TRANSFER

One of the institute’s key objectives is to communicate research findings to the scientific community, to political decision-makers and to interested members of the public. ZEW has continuous contact with the worlds of academia, business, and politics, so the institute receives external impetus enriching and improving its research work, its advising activities, and its training programmes. To ensure that information reaches the intended recipients, ZEW makes use of a variety of communication channels:

- ZEW Discussion Papers and book series,
- information brochures and research reports,
- documentations and studies,
- seminars, conferences, and symposia,
- scientific and public events,
- print, digital and social media,
- media contacts.

ZEW Publications

The primary medium used for the dissemination of research findings are the ZEW Discussion Papers, which are subject to an internal review process before publication. The papers are made available free-of-charge via the ZEW homepage and can also be accessed via leading research databases. As reflected in the high download rate, ZEW Discussion Papers are highly regarded within the economics community. In 2016, a total of 9,250 publications were downloaded via RepEc.

ZEW also produces an established book series entitled “ZEW Economic Studies” (Springer Verlag), which are released in English.

The readership of the periodical publications, e.g. the ZEWnews, and of the institute’s reports includes researchers and students from a range of disciplines, management and executive staff from companies, as well as members of the public who have a general interest in economic policy issues. These publications contain selected findings and economic policy analyses produced by ZEW, provide reports about conferences and events, and include information regarding further training seminars offered by ZEW.

In order to promote ZEW’s international visibility, general information about the institute is made available in German, English and Chinese.

Digital Information Resources

ZEW spreads information to the media and the general public via a comprehensive range of digital information channels. On the ZEW website, which was relaunched in the beginning of 2016 and now features a new and modern design as well as an improved user interface, a broad range of up-to-date information can be accessed in German and English. A large number of research papers and studies are also available for download. The ZEW Newsletter, produced in both German and English, is sent to some 7,100 subscribers each month. The newsletter provides information about research findings, publications, events and career options. As part of the institute’s internationalisation strategy, content on the ZEW website is generally available in English. In addition, ZEW has been active on Twitter since the end of 2014 (@ZEW). The institute tweets information about events, conferences, and publications as well as economic policy statements.

Efficient Communication

ZEW keeps the media informed about research findings with approximately 120 press releases each year. By way of these press releases, ZEW contributes to current economic policy discussions.

The professional layout of ZEW publications, based on the institute’s corporate design, ensures that ZEW papers and reports are easily and quickly recognisable. A reader-friendly layout as well as informative graphics and illustrations improve the publications’ appeal to the relevant target audience.

Events

Numerous ZEW events provide a platform for networking with research institutions, firms, government agencies, organisations and the public. Besides scientific conferences, ZEW also organises forums and talks featuring renowned speakers which attract interested members of the public. Events include:

- First-Hand Information on Economic Policy
- ZEW Economic Forum
- ZEW Lunch Debates debate series in Brussels.

Knowledge Transfer & Qualification Programmes

Each year, the seminar programme organised by ZEW – a unique offer in the sphere of economics research in Germany – attracts hundreds of participants from the fields of academia, administration and business. ZEW seminars provide further training that is informed by scientific research and highly relevant to practice. While doing so, ZEW researchers and experts from a number of organisations and companies work together to create the seminars.

The ZEW Service Department “Knowledge Transfer & Qualification Programmes” provides further training in a variety of formats. Each year, a large number of expert seminars for participants from the realms of academic research, politics and business take place. In addition to seminars addressing economics and business administration issues (e.g. financial market analysis), especially seminars on methodological approaches (e.g. econometrics) and courses which provide training in soft skills are popular.

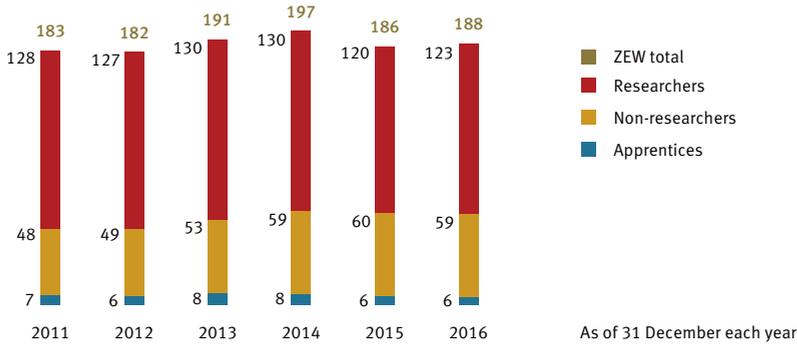
Around 30 customised seminars take place each year. These courses address firms and public institutions that wish to offer their staff members the opportunity to benefit from tailor-made further training. For international participants, the Service Department provides a further training programme in English. Internal further training seminars are provided for ZEW staff members. In such seminars staff members receive training in, for example, presentation and moderation techniques in both English and German.

STAFF REPORT AND FINANCIAL STATEMENT

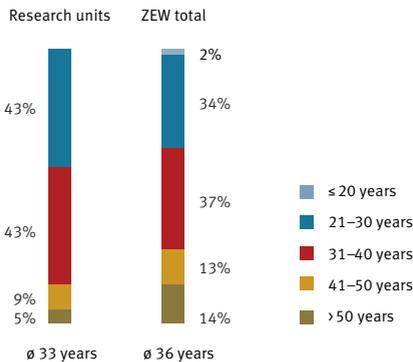
Staff Report

At the end of 2016, ZEW employed a total of 188 staff members (2015: 186), of whom 123 were engaged in research activities (2015: 120). The year under report saw the departure of 17 researchers from ZEW (2015: 21). While one quarter of the research staff members who left ZEW subsequently accepted jobs in businesses and associations, around 66 per cent accepted positions in universities or in government institutions. Figure 1 illustrates the staff development over the course of the reporting period. The majority of staff members employed in ZEW research units have traditionally been graduates holding a degree in economic science. The average age of a ZEW researcher is 33, indicating the extent to which the institute benefits from a pool of emerging, talented researchers. The average age of staff members across all ZEW units, both research and service units, is 36 (see Figure 2). In accordance with the ZEW human resources policy, the vast majority of research staff (86 per cent) are employed on fixed-term contracts. The dynamic

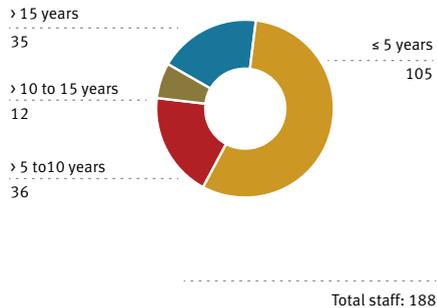
1] STAFF DEVELOPMENT



2] AGE DISTRIBUTION



3] DURATION OF EMPLOYMENT

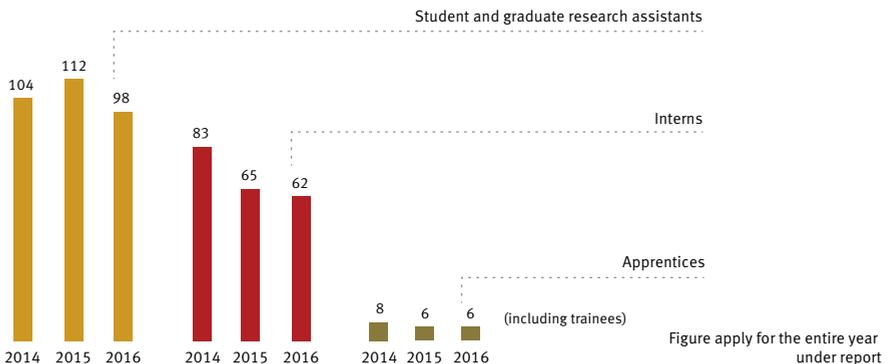


nature of the ZEW workforce is reflected by the relatively large proportion of staff members, a total of 105, who have been working at ZEW for less than five years (see Figure 3).

Through the employment of both interns, and student and graduate research assistants, ZEW not only makes a significant contribution to the training and qualification of young academics, but also offers these young people support and professional guidance before they embark on their careers. In 2016, a total of 62 (2015: 65) interns took advantage of this opportunity offered by ZEW (see Figure 4). The majority of student and graduate research assistants employed at ZEW are studying at the nearby universities in Mannheim and Heidelberg, or at one of the other universities located in the Rhine-Neckar Metropolitan Region. Thanks to their participation in the work of ZEW research and service units, these students gain valuable initial professional experience. For particularly talented assistants, employment as a student research assistant at ZEW can mark the beginning of a more long-term professional relationship with the institute. As of 31 December 2016, a total of 98 students had taken advantage of the opportunities made available by ZEW (2015: 112).

The work carried out by ZEW is supported by numerous Research Associates from a number of universities in both Germany and abroad. Their support is critical, not only for the training and support of research staff, but also for the creation and development of research areas. Furthermore, the engagement of these Research Associates plays a significant role in establishing and maintaining contact and cooperation with project partners, and in the successful acquisition of third-party funding. In the course of the reporting period, numerous researchers, visiting ZEW from their home institutions in Germany or abroad, were directly involved in the work carried out at ZEW. Many of these Visiting Researchers chose to complete a research stay at ZEW in order to contribute to the institute's research projects and to engage in an exchange of information and experience.

4] STAFF IN TRAINING

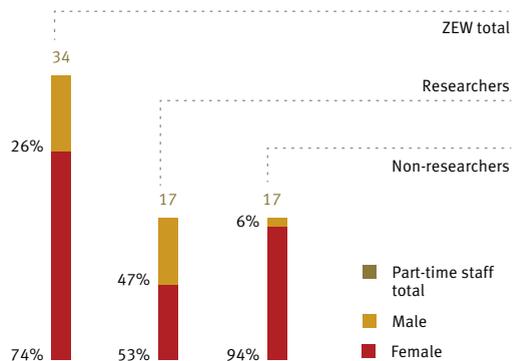


With its Visiting Researchers Programme (VRP), ZEW aims to further develop its international networks. The VRP is orientated towards researchers who are interested in completing an extended research stay at ZEW. The ZEW “Doctoral Studies Network“ promotes cooperation with universities and gives doctoral students the opportunity to apply the knowledge and skills which they gain through their work at ZEW in their own empirical economic research projects, whilst also enabling them to cooperate on international projects. The involvement of external partners in ZEW research projects is an additional way in which the institute promotes transnational cooperation. Within the scope of such activities, the institute expanded its international ties and established new contacts worldwide.

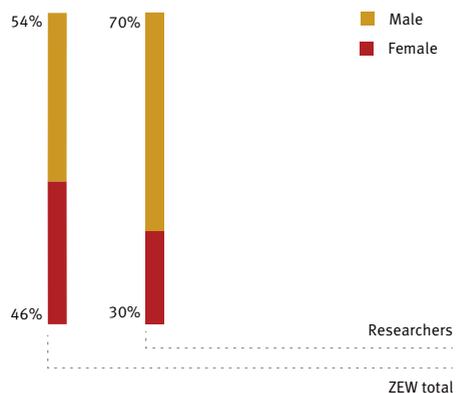
Two of the central priorities of ZEW are the completion of high-quality research and the provision of internationally relevant economic policy advice. In order to achieve these goals, ZEW has an established qualification programme which serves to promote the further academic education and training of ZEW staff. This programme gives staff members the scope to take temporary leave of their work on research projects in order to undertake further academic study. Research staff might therefore make use of such sabbaticals to complete doctorates, to obtain a postdoctoral qualification, or to complete a research stay at a renowned research institution abroad. In 2016, nine researchers completed a doctoral thesis. Several of these were awarded the highest possible grade, “summa cum laude”.

A special feature of the ZEW human resources policy, which renders employment at ZEW particularly appealing to young researchers, is the possibility of determining one’s own flexible working hours. At the end of 2016, a total of 34 staff members (2015: 35), representing 18 per cent of all staff (see Figure 5), were taking advantage of the opportunity to determine their own work schedule on a part-time basis. ZEW hereby actively encourages its staff to maintain a healthy

5] PART-TIME STAFF



6] STAFF BY GENDER

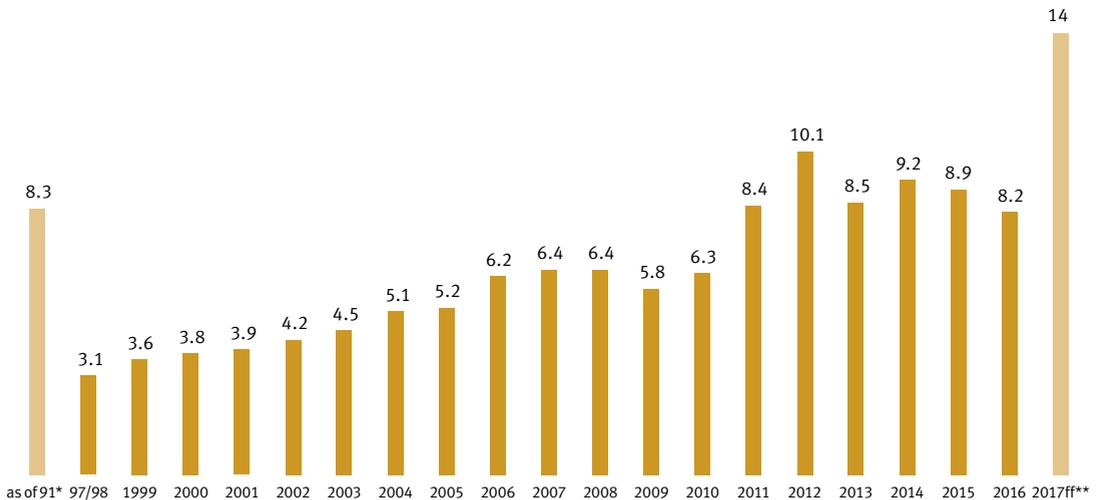


work-life balance and facilitates the reconciliation of work and family life. As in the previous year, the proportion of female researchers engaged at ZEW during the reporting period was 30 per cent. Across the entire institute, 46 per cent of staff members were female (see Figure 6). The proportion of female senior researchers at ZEW was 38 per cent in the year under report.

Financial Report

The ZEW balance sheet showing endowment, finances, and revenues for the fiscal year of 2016 is very positive. Given the difficult conditions which arose as a result of the economic and financial crisis in Europe, this positive outcome is not to be taken for granted. The challenge posed by the increase in national and international competition for third-party funding has also become considerable. Despite this increase in competition, however, the proportion of ZEW funding originating from third-party sources (including other revenues) remained on a constant level in 2016 with 44 per cent (2015: 46 per cent). The current volume of third-party funding for 2017 and the following years amounts to a total value of EUR 14 million (see Figure 7). ZEW’s successful acquisition of funding is proof of the value of the work carried out by the institute and is to be regarded as recognition of the excellent quality of the research conducted. Since its foundation in 1991, ZEW has received a total of EUR 141 million in the form of third-party funding. ZEW’s financial charter, which allows for the receipt of general funding in fixed accounts, enables surplus revenues resulting from increases in third-party funding to be designated as “appro-

7] DEVELOPMENT OF THIRD-PARTY FUNDING
(GROSS FUNDING IN EUR MILLION)



* Includes third-party funding received in the fiscal years of 91/92, 92/93, 93/94, 94/95, 95/96, 96/97; **Current volume of commissioned projects

appropriated reserves“. The net income arises from the surplus in the profit-and-loss statement, corrected by withdrawals from “appropriated reserves“. For the fiscal year of 2016, ZEW therefore registered an annual deficit of EUR 0.29 million and a net profit of EUR 0.17 million (2015: EUR 0.34 million, see Figure 8). As can be seen in Figure 9, the total net capital of EUR 23.06 million represents an increase in comparison to the total net capital of EUR 16.50 million indicated for 2015. This increase is mainly due to the purchase of the ZEW building, which was financed by a loan, as well as to a gain in stocks. Looking at the source of funds, the increased total net income is predominately a result of the total value of liabilities and advance payments. The cash and equivalents balance proves good liquidity.

To summarise, the following developments in ZEW’s financial position were of significance in the fiscal year of 2016: Total revenues, amounting to EUR 19.37 million, fell by EUR 0.58 million. The reason for this was the decrease in gross turnover of third-party funding, amounting to EUR 8.23 million (2015: EUR 8.90 million). Total expenses were EUR 19.63 million, which represents a EUR 0.43 million decrease in comparison to last year’s figure (2015: EUR 20.06 million). This is the result of a decrease in “other operating costs”.

8] ZEW PROFIT-AND-LOSS STATEMENT

(in K euros)	2014	2015	2016*
Institutional funds	9,632	9,921	9,934
Joint Initiative for Research and Innovation Funding	328	312	317
Third-party funds (turnover, inventory changes, subsidies)	9,184	8,902	8,231
Other business revenues, financial profit	313	287	376
Income from the reversal of the special item for contributions to fixed assets	505	527	510
Total revenues	19,962	19,949	19,368
Staff expenditures	11,851	11,706	12,257
Third-party services	804	952	1,347
Other operating expenditures	6,288	6,409	5,319
Asset write-offs	505	527	510
Allocation to special items for contributions to fixed assets	548	462	198
Other taxes	22	7	–
Total expenses	20,018	20,063	19,631
Financial result	–	-25	-25
Profit/loss for the financial year	-56	-139	-288
Withdrawals from appropriated reserves	776	475	462
Net income	720	336	174

* preliminary figures

9] ZEW BALANCE SHEET AS OF 31 DECEMBER 2016*

	31.12.2015 in K euros	31.12.2016 in K euros		31.12.2015 in K euros	31.12.2016 in K euros
Assets			Liabilities and equity		
Intangible assets	280	173	Share capital	26	26
Downpayments made	–	10	Appropriated reserves	3,966	3,840
Real estate and construction in progress	2,997	8,541	Other reserves	2,170	2,170
Equipment	652	546	Net income	336	174
Fixed assets	3,929	9,270	Shareholder's equity	6,498	6,210
Stocks	3,086	4,299	Untaxed reserves	1,734	1,475
Receivables/other assets	994	689	Reserves	2,640	2,430
Cash at banks	8,352	8,648	Advances received	3,192	4,402
Current assets	12,432	13,636	Liabilities to banks	–	5,918
Prepaid expenses	140	151	Other liabilities	1,752	2,622
Total	16,501	23,057	Outside capital	8,269	15,372
			Total	16,501	23,057

* preliminary figures

INTERNATIONAL RESEARCH COOPERATION

ZEW is an international research institute not only in terms of its research focus, but also in terms of cross-border cooperation – because top-quality research requires collaboration on a European and global level. The ability to attract renowned researchers and foreign cooperation partners is an important feature of any successful research institution. International cooperation is also an important factor when competing for third-party funds.

Participation in EU Framework Programmes

In the period covered by this report, ZEW has continued a significant amount of international activity in the fields of research and policy advice. ZEW has managed to continue its successful work from previous research programmes under the new framework programme „Horizon 2020“ (2014–2020). So far six projects within Horizon 2020 which ZEW researchers are involved in have been approved, including one project for which ZEW is the consortium leader.

Economic Policy Advice on EU Level

Beyond scientific project work, ZEW provides expert advice for the European policy-making process. The institute has established itself as a key source of policy advice in Brussels. For instance, ZEW offers input to the EU Commission on the design of European research and innovation policy, and leading ZEW researchers advise the EU Commission in a number of economic policy areas. No fewer than nine ZEW scientists have acted as advisers to the Commission during the period covered by this report.



The organiser, panellists and moderator before the ZEW Lunch Debate (from left): Johannes Jung (Representation of the State of Baden-Württemberg to the EU), Torsten Arnswald (Fiscal Policy Division, German Federal Ministry of Finance), Thomas Kohl (ZEW Director), Maitreyi Seetharaman (journalist), Dr. Nicole Hoffmeister-Kraut (Baden-Württemberg Minister of Economic Affairs, Labour and Housing), Dr. Mathias Dolls (ZEW), László Andor, PhD (former EU Commissioner) and Fabien Dell, PhD (member of EU Commissioner for Economic and Financial Affairs Pierre Moscovici's cabinet).

The strong links between ZEW and the European Commission were also evidenced by EU Commissioner for Research and Innovation Carlos Moedas' visit to the institute in April 2016. During his visit, Moedas engaged in discussions with the ZEW board of executives and gave a talk on "The Future of Market-Creating Research and Innovation in Europe" as part of ZEW's lecture series "First-Hand Information on Economic Policy".

Moreover, ZEW continues to succeed in strengthening its presence and visibility on the European arena with a discussion series in Brussels which began in 2014, the "ZEW Lunch Debates". In 2016, four events in this series took place with remarkable success, bringing together renowned ZEW researchers with other economics experts and an audience of invited guests to discuss the current economic challenges facing Europe. High-level EC staff, members of the European Parliament, as well as representatives of industry and research have participated as panellists in these debates, including MEPs Sylvie Goulard and Peter Simon, Dr. Nicole Hoffmeister-Kraut, Minister of Economic Affairs, Labour and Housing of the State of Baden-Württemberg, and former EU Commissioner László Andor.

Cooperation Networks

International cooperation serves the purpose of promoting scientific exchange. ZEW maintains links with a growing number of universities, research institutions and organisations worldwide. This cooperation encompasses joint projects, publications, and mutual research visits with institutions across Europe, the US, and Asia. During the period covered by this report, ZEW worked particularly intensively with institutions in the UK and the US, including world-renowned partners like Oxford University and University College London in the UK as well as NBER and the Massachusetts Institute of Technology in the US. Research projects within the framework of ZEW's SEEK programme were another important area of collaboration in 2016.

In terms of cooperation with the US, one particular highlight was the Trans-Atlantic Public Economics Seminar (TAPES) hosted by ZEW in Mannheim in June 2016. The conference, set up by one of the most important associations of American economists, the National Bureau of Economic Research (NBER), is one of the largest events held in the field of public finance in the world. Over three days, around 30 experts discussed findings from the latest research on social insurance programmes.

Cooperation with China has also intensified. In collaboration with Fudan University in Shanghai, ZEW continues to run the "China Economic Panel", a monthly survey on macroeconomic trends in China. Together with PricewaterhouseCoopers, ZEW and Fudan also conduct a quarterly survey on German-Chinese trade. ZEW once again supported the German Federal Ministry of Education and Research in organising the annual "Sino-German Platform for Innovation". The institute also organised, together with the University of International Business and Economics (UIBE), the 2016 annual Beijing Humboldt Forum, which was devoted to the topic „Green Economy“, as well as the newly launched annual ZEW Summer School for UIBE students.

2016 also saw the Memorandum of Understanding with Tsinghua University come to fruition in the form of a jointly organised workshop on "Economics of Innovation and Entrepreneurship". The annual conference of the International Consortium of China Studies (ICSS) of the Peking



ZEW hosted the 2016 Trans-Atlantic Public Economics Seminar (TAPES), which featured high-profile speakers such as Professor Amy Finkelstein from the Massachusetts Institute of Technology (MIT), Cambridge, USA.

University's National School of Development was also hosted by ZEW in July of this year. Peking University and Tsinghua University are among the most influential universities in China.

The development and expansion of international networks was also greatly enhanced by the 463 international researchers from 37 different countries who came to ZEW over the course of the year. The ZEW Visiting Researchers Programme (VRP) provides a framework for research stays.

Conferences and Publications

ZEW increases its visibility outside of Europe through its participation in international conferences. In January 2016 ZEW participated in the annual meeting of the Allied Social Sciences Association (ASSA) in San Francisco, the most important economics conference in the world. In August ZEW contributed to the European Economic Association meeting in Geneva, which is equally significant in Europe. On both occasions ZEW researchers presented their research findings. In addition, the institute was represented with a stand providing information about major research areas as well as opportunities for cooperation and research stays. At the ASSA job market, ZEW research unit heads and human resources staff conducted job interviews with up-and-coming economists.

Further measures to enhance international networking include information brochures for specific target groups, press releases, an English version of the institute website, a general information brochure in Chinese, as well as public relations activities at international conferences. ZEW regularly welcomes international delegations. In 2016 ZEW also hosted a group of international

students from the University of Mannheim. The visit was conducted as part of the “Step by Step” project run by the International Office at the University of Mannheim and financed by the German Academic Exchange Service (DAAD). The visiting students had the opportunity to discuss current economic issues with ZEW researchers and learn about ZEW’s work as a research institute.



ZEW hosted an information stand at the EEA-ESEM in Geneva in August 2016. Conference participants had the opportunity to catch up on career, collaboration and further training possibilities at ZEW.

ZEW RESEARCH DATA CENTRE

The ZEW Research Data Centre (ZEW-FDZ) provides external researchers access to ZEW research data. The ZEW-FDZ primarily provides micro-level data from ZEW firm surveys on topics such as innovation activity, the development of start-ups, and the use of information and communication technologies. In addition, the ZEW-FDZ offers data from ZEW expert surveys, e.g. the ZEW Financial Market Test, and from personal interviews.

**Firm Surveys:**

- Mannheim Innovation Panel (MIP)
- KfW/ZEW Start-up Panel/ IAB/ZEW Start-up Panel
- Generational Change in SMEs
- High-Tech Start-up Panel
- Academic Spin-offs in Germany and Austria
- ICT Survey
- Business Survey in the Information Economy
- Eco-Innovation

Expert surveys:

- ZEW Financial Market Survey
- Climate Negotiations Equity
- Transport Market Barometer

Individual-level surveys:

- ECO-CARS (Survey of Potential Car Buyers)
- SECO@home (Household Survey on Energy Consumption)
- ZEW Secondary School-to-University Transition Panel

External researchers have the opportunity to work with ZEW data within FDZ premises at ZEW on request. The use of ZEW data by external researchers is restricted to academic research projects. External researchers can also access factually anonymised ZEW datasets as Scientific-Use-Files for use in their own institution. Selected datasets of the Mannheim Innovation Panel (MIP) are also made available as Education-Use-Files for application in university teaching.

All use of ZEW data is free of charge and limited to scientific, non-commercial research. The ZEW-FDZ has been accredited by the German Data Forum (RatSWD).

In the period covered by this report, 32 external researchers worked with ZEW data within FDZ premises; on average, the visiting researchers came to the FDZ twice a year. Over 60 external researchers utilised Scientific-Use-Files of ZEW data in 2016. Around 75 per cent of these license agreements were made for MIP data.

Since 1996, more than 400 external researchers have used MIP data, about two-fifth of whom worked outside of Germany, and about eleven per cent outside of Europe. MIP Education-Use-Files have been applied by 30 university scholars for teaching so far. In 2016, three new users seized this opportunity.

On 16 and 17 November 2016 organised a ZEW FDZ data user workshop. About 40 national and international researchers attended the event to present and discuss their studies based on ZEW survey data.

Further information: www.zew.de/fdz-en

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Dr. Sandra Gottschalk (sandra.gottschalk@zew.de)

Simona Wagner (simona.wagner@zew.de)

The ZEW-FDZ Data User Workshop featured presentations on various aspects of entrepreneurship, firm dynamics and innovation activities. At the end of the workshop the participants had the opportunity to put forward critical comments and suggestions on how ZEW could improve and extend its data.



DATABASES

The research units at ZEW are responsible for creating and maintaining databases for the purposes of academic research. Some of the most prominent examples are listed below. A number of the listed databases can be accessed via the ZEW Research Data Centre (ZEW-FDZ).

• **Business Survey in the Information Economy**

Quarterly survey of firms in the ICT hardware sector, ICT service providers, media service providers, and knowledge-intensive service providers on their current business situation and the expected development

Contact: Dr. Daniel Erdsiek, daniel.erdsiek@zew.de

• **IAB/ZEW Start-up Panel**

Database containing information on business start-ups for the analysis of their development during the first years of operation; conducted in cooperation with the Institute for Employment Research (IAB) and Creditreform

Contact: Jürgen Egel, juergen.egel@zew.de

• **Mannheim Innovation Panel (MIP)**

Database containing information on the innovation activities of companies in Germany, collected on the basis of an annual company survey

Contact: Dr. Christian Rammer, christian.rammer@zew.de

• **Mannheim Enterprise Panel (MEP)**

Database containing information on firms with business activities in Germany for the analysis of start-ups, company growth, and firm survival

Contact: Johannes Bersch, johannes.beresch@zew.de

• **ZEW Financial Market Survey**

Regular survey among financial market experts providing expectation data on financial market trends as well as macroeconomic developments

Contact: Dr. Michael Schröder, michael.schroeder@zew.de

RESEARCH PROGRAMME
STRENGTHENING EFFICIENCY AND COMPETITIVENESS
IN THE EUROPEAN KNOWLEDGE ECONOMIES (SEEK)



The ZEW research programme “Strengthening Efficiency and Competitiveness in the European Knowledge Economies” (SEEK) has been funded by the State of Baden-Württemberg since its kick-off in 2010. The key objective of SEEK is to strengthen top-level research in the field of economics. As part of the SEEK programme, ZEW also aims to expand its international networks and improve its visibility in the scientific community.

ZEW has implemented a number of research activities using SEEK funds. A priority is placed on research projects that enable cooperation between ZEW researchers and renowned international economists. SEEK research teams explore topics of relevance to the efficiency and competitiveness of Europe’s knowledge-based economies. The research findings aim to provide decision-makers in politics and business with strategies to overcome the major economic challenges facing Europe.

„Overcoming the Economic Crisis in Europe“ is currently the overarching topic that informs research undertaken in the programme. SEEK projects are examining the origin of the crisis; the conditions for smart, sustainable, and inclusive growth; as well as long-term strategies to ensure economic and financial stability. The key aim is to provide decision-makers in the realms of politics and government administration with empirical research so they can make fact-based decisions that help to resolve the crisis.

Since the beginning of the SEEK programme, ZEW has launched five annual calls for proposals, inviting international researchers in economics to submit project proposals in cooperation with ZEW economists. Project proposals are evaluated by a scientific board that consists of distinguished international researchers. This competitive procedure ensures scientific excellence and guarantees exclusive funding of high-level projects within the framework of the SEEK programme.

SEEK Research Projects

Four projects, which were launched in 2014, were successfully completed in February 2016:

- Side Effects of Economic Crises in Europe and Provision of Online Public Goods
- Resilience in Times of Crisis: The Role of ICT – Evidence for Europe
- Human Capital Formation in Young Firms and the Crisis: A Comparative Analysis of Portugal and Germany
- Credit Supply of Banks and SME Financing in the Crisis – Unveiling the Real Economic Effects

Thanks to the success of the SEEK programme, the government of Baden-Württemberg decided to extend funding past 2015 for three additional years (2016–2019). Since January 2016 ZEW has been granted €800,000 annually to invest in SEEK projects. The new SEEK projects have been tailored to fit the funding time frame and conditions: at present, three long-term research projects spanning various research units at ZEW are receiving funding. The participation of international scholars continues to be the most important precondition for the financing of projects. After review by the Scientific Board and a group of international evaluators, funding was granted to the following research projects:

- Regional Inequalities in Living Standards in View of Fiscal and Labour Market Policies
- Digital Marketplaces and Platforms
- Options for Effective Fiscal and Economic Governance in the Eurozone – A European Network on Better Institutions

The projects, which were launched in April 2016, are expected to be completed in March 2019. More information on all SEEK projects is available at the SEEK website: <http://seek.zew.eu>

SEEK Conferences

In order to increase ZEW's international visibility, the institute has hosted a regular SEEK Conference since 2011. These conferences have garnered great interest, attracting some 200 international participants from the realms of academia, politics, and business each time. A number of high-profile speakers have contributed to the success of the conferences, including EU Commissioner Máire Geoghegan-Quinn, former Italian Prime Minister Professor Mario Monti, Professor Klaus Töpfer (Executive Director of the Institute for Advanced Sustainability Studies and a former Federal Minister) and renowned researchers like Professor Thomas Piketty (Paris School of Economics), Professor Philippe Aghion (Harvard University), and Professor Bronwyn Hall (University of California at Berkeley).

Taking Stock of SEEK

SEEK has been an impressive success since its launch. More than 40 international projects have been carried out as part of the programme, providing ZEW researchers with the opportunity to closely collaborate with distinguished international researchers. Cooperative projects have considerably improved the quality of scientific research at ZEW, as demonstrated by the increase in ZEW's publication output and the great number of SEEK papers accepted for publication in high-quality scientific journals.

SEEK also provides ZEW researchers with the opportunity to enhance their contacts within the international scientific community by way of research stays at partner institutions. More than 120 research stays have taken place as part of SEEK projects, helping ZEW to establish or intensify cooperative relationships with some 70 international research institutions and universities. In addition to the SEEK Conferences, ZEW's visibility is enhanced by the many presentations, workshops and publications that are based on SEEK research findings. In order to disseminate SEEK

research results, ZEW researchers have given some 130 lectures at international scientific conferences and organised more than 30 workshops. ZEW researchers have also published a great number of “Policy Briefs” to inform national and international decision-makers in a concise way about SEEK research results. The Policy Briefs are an important cornerstone of ZEW’s policy advising activities.

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Fiscal governance in the eurozone was the topic of a SEEK workshop organised at ZEW in November 2016. Speakers included Professor Albert Solé Ollé of the University of Barcelona, who provided an inspiring presentation on the influence of windfall gains on fiscal policy and governance in times of crisis.

LEIBNIZ SCIENCECAMPUS

MANNHEIM CENTRE FOR COMPETITION AND INNOVATION (MaCCI)

The Leibniz ScienceCampus “Mannheim Centre for Competition and Innovation” (MaCCI) was launched by ZEW in cooperation with the School of Law and Economics at the University of



Mannheim at the beginning of 2012. A ScienceCampus is a joint initiative of at least one Leibniz institution and one university, as well as the federal state where the participants are located. The aim of the initiative, which encourages regional partnerships between Leibniz institutions, universities and other partners, is the promotion of excellence in research.

Goals of the MaCCI

The MaCCI ScienceCampus aims to initiate research projects at the intersection of law and economics in the areas of competition policy, regulation and innovation. A particular focus is placed on basic research, on related applied and empirical research, and on comparative issues. The MaCCI ScienceCampus thus serves to strengthen both the position of German legal research in Europe as well as the relevance of such research for legal practice. The initiative also creates opportunities for young researchers to advance their careers while sustainably improving the ability of participating institutions to attract young academic talent.

Background and Motivation

In recent years, European and German competition, regulation and innovation policies have undergone significant changes. At the same time, calls for policies informed by empirical evidence have been growing. Accordingly, research should no longer focus in isolation on the impact of policy measures in individual areas, but rather consider direct and indirect exogenous impacts as well as reciprocal effects between policy fields. The economic assessment of policy measures is therefore increasingly difficult; in addition to theoretical and empirical considerations, policy evaluation work must take complex institutional frameworks into account. This is precisely where legal analysis is of particular relevance: The impact of a variety of legal regulations in competition and innovation policy must be compared; problems must be identified to develop yardsticks based upon economic insights that are consistent with regulatory policy, ensure legal certainty, and can be practically implemented. Against this backdrop, interdisciplinary dialogue is urgently needed to arrive at practical solutions that are based on economic criteria.

Topic Areas

The MaCCI ScienceCampus focuses on issues that require cooperation between economists and legal scholars. Topics of research within the MaCCI campus include the establishment of standards in competition law, competition economics and innovation policy; competition in the healthcare sector; the public and private enforcement of competition law; issues arising from

the implementation and strategic use of intellectual property law (such as patents and trademarks); and the development of competition in telecommunications and energy markets. The guiding principles of MaCCI are to conduct research that is interdisciplinary in nature and also relevant to real-world practice.

Contributions to Doctoral Education and Teaching

The ScienceCampus contributes to the education of Master's and PhD students in three ways: As part of the Mannheim Competition Policy Forum, lectures are held every two weeks regarding current cases in competition law. Speakers at these events include representatives from government authorities and consulting firms, as well as experts from relevant fields of research.

Doctoral candidates are regularly involved in MaCCI projects, and some are also integrated in the Centre for Doctoral Studies in Economics (CDSE) at the University of Mannheim.

The ScienceCampus aims to develop a European network for doctoral education at the intersection of law and economics, with the already existing "Competition Law and Economics European Network" (CLEEN) serving as a springboard. Currently, some 30 doctoral students are involved in MaCCI activities.

Conferences and Networks

Within the framework of the ScienceCampus, conferences and workshops are organised on topics concerning competition law and the economics of competition. In 2016, MaCCI was involved in organising 12 academic conferences. In November 2016, for example, ZEW hosted the "MaCCI Law & Economics Conference", which was devoted to the topic of "Cartel Damages in Europe: The New Framework after the Directive". Highlights of the conference included talks given by Margaret Levenstein, PhD (University of Michigan, Ann Arbor) and Professor Wouter Wils (European Commission and King's College London). In panel sessions the conference participants discussed challenges in implementing the European Commission's Damages Directive in individual Member States. Talks were given by scholars of economics and law, as well as by legal and economic policy practitioners concerned with actual implementation of the Directive.

In addition, the MaCCI Annual Conference was held at ZEW for the fifth time in May 2016. A highlight of this conference was the talk given by Professor William E. Kovacic of King's College London concerning the efficiency of anti-trust and regulatory authorities when cases are conducted in parallel. In 2016, the conference once again featured break-out sessions to provide participants with the opportunity to delve into various topics, including price parity clauses, minority investment stakes, and the adjustment of competition law to online markets.

The regional MaCCI network contains 70 core members, each of whom conduct research at the intersection of law and economics. The work of the MaCCI is supported by a Scientific Advisory Board that is composed of renowned international researchers in the fields of competition, regulatory and innovation policy.

Board of Directors

- Prof. Dr. Irene Bertschek, ZEW
- Prof. Dr. Thomas Fetzner, University of Mannheim
- Prof. Dr. Kai Hüschelrath, ZEW
- Prof. Dr. Martin Peitz, University of Mannheim
- Prof. Achim Wambach, PhD, ZEW

Coordinators

- Stefan Frübing, ZEW (stefan.fruebing@zew.de)
- Prof. Dr. Kai Hüschelrath, ZEW (kai.hueschelrath@zew.de)

Additional Information

www.macci.eu



Margaret Levenstein, PhD during her keynote speech at the MaCCI Conference on cartel damages

LEIBNIZ SCIENCECAMPUS
MANNHEIM TAXATION (MATAX)



On 1 April 2014, the Centre for European Economic Research (ZEW) launched the Mannheim Taxation (MaTax) Leibniz ScienceCampus in cooperation with the University of Mannheim. MaTax also collaborates with Heidelberg University's Institute for Financial and Tax Law. MaTax's research focuses on future fiscal policy in light of European and global integration and new economic and societal challenges. One of the goals of the interdisciplinary collaboration between MaTax researchers in the fields of economics, business administration, law and political science is to develop policy options that contribute to meeting these challenges, while also taking into account the relevant macroeconomic, legal and entrepreneurial conditions. A further aim of the ScienceCampus is to intensify collaboration between researchers by facilitating the joint usage of research data and the exchange of methodological expertise, thereby contributing to the development of research agendas. Both of these aspects are important assets of the MaTax ScienceCampus. In the interest of sustainability, the ScienceCampus places particular emphasis on promoting high-quality research and doctoral education.

MaTax is led by a board of directors. In selecting and developing projects and evaluating these on an ongoing basis, the board is assisted by a scientific advisory board comprised of internationally renowned researchers.

Research Funding

The MaTax ScienceCampus provides funding for projects undertaken by researchers at participating institutions. The projects are required to meet high research standards and should make a significant contribution to MaTax's core research areas. Researchers at any of the participating institutions may submit a research proposal to the board of directors. The board then decides which of the proposed research projects will receive MaTax funding on a quarterly basis. Among other topics, the projects funded in 2016 address the efficiency of the tax authorities and tax collection in Germany, the legal feasibility of optimal economic tax models, tax avoidance among multinational corporations, and tax structures in Europe. Regular workshops provide an opportunity for the findings of these MaTax projects to be presented and discussed.

Knowledge Transfer, Communication and International Networking

The MaTax ScienceCampus aims to ensure that the findings of these ambitious research projects are made accessible and communicated to a range of target groups. Key elements of MaTax's communication strategy include regular scientific conferences and workshops in Mannheim, promoting researcher networking through international conference participation, supporting research visits and hosting guest lecturers, along with policy advising activities in the form of research reports, contributions to taxation policy debates and workshops that facilitate exchange between the fields of science, politics and business.

In October 2016, ZEW staged the third Annual MaTax Conference, where approximately 60 researchers discussed their research projects. In conjunction with the National Bureau of Economic Research (NBER), MaTax also hosted the Trans-Atlantic Public Economics Seminar (TAPES) – one of the most prestigious conference series in public finance. The conference saw contributions from leading academics in the field, including Professor Martin Feldstein (Harvard University) and Amy Finkelstein (Massachusetts Institute of Technology). In addition, a MaTax workshop was held on Lab Experiments in Public Economics in February 2016. Jean-Robert Tyran, a professor at the University of Vienna and one of the leading researchers in the field of experimental public finance, gave one of the keynote speeches at the workshop.

In September 2016, MaTax hosted the fifth Workshop on Empirical Research in Business Accounting in cooperation with the universities of Frankfurt (Oder), Hannover and Cologne. Dr. Thomas Hemmelgarn (head of the economic analysis of taxation at the EC's Directorate General for Taxation and Customs Union) opened the proceedings with a discussion of contemporary research on current developments in US tax policy.

ZEW welcomed a broader audience to its January 2016 event, "Why Germany Needs to Provide Fiscal Incentives for Innovation", which was jointly organised with PricewaterhouseCoopers



In his keynote speech at the Annual MaTax Conference, Professor Dhammika Dharmapala from the Law School of Chicago University provided valuable insights into the past and future of income taxation.

During the fifth MaTax workshop on empirical tax research, Dr. Thomas Hemmelgarn discussed how questions surrounding fair taxation and the elimination of harmful tax competition are becoming increasingly important for EU tax policy.



(PwC). Renowned experts from the fields of academia, politics, and business discussed Germany's need for fiscal policy that encourages research and development.

Doctoral Education and Supporting the Next Generation of Researchers

Promoting the next generation of researchers is a key task of the MaTax ScienceCampus. Around 40 doctoral students are active in the participating university departments and ZEW research units. These students play an important role in addressing key MaTax research questions and receive support in conducting their associated dissertation projects. At the University of Mannheim's Graduate School of Economics and Social Sciences (GESS) MaTax has also established a special "Tax Track", which is based in the Centre for Doctoral Studies in Business (CDSB). In the summer of 2016, MaTax staged the IIPF Summer School, an annual event for doctoral students from all over the world, which is hosted each year by a leading European institution. The theme of the 2016 summer school was social security systems. Professor Luigi Pistaferri (Stanford University) and Professor Josef Zweimüller (University of Zurich) gave keynote lectures on the topic, while around 30 doctoral students from the United States, Europe and Africa had the opportunity to present their own research projects.

Board of Directors

- Prof. Dr. Thomas Fetzner, University of Mannheim
- Prof. Dr. Friedrich Heinemann, ZEW und Heidelberg University
- Thomas Kohl, ZEW
- Prof. Dr. Christoph Spengel, University of Mannheim (board spokesman)

Coordination

- Dr. Philipp Dörrenberg, ZEW (philipp.doerrenberg@zew.de)
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Further information

www.matax.eu

» INVESTIGATING THE FUTURE OF WORK.



Dr. Melanie Arntz

Acting Head of the Research Department
Labour Markets, Human Resources and Social Policy





future

RESEARCH DEPARTMENT LABOUR MARKETS, HUMAN RESOURCES AND SOCIAL POLICY



Dr. Melanie Arntz
Acting Head of Department



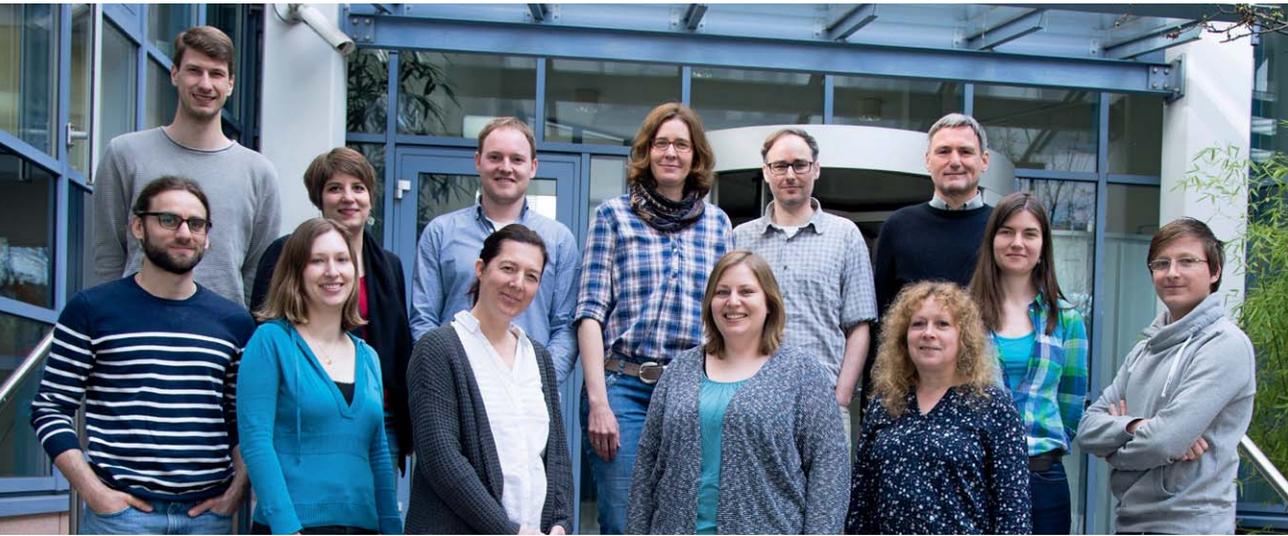
PD Dr. Friedhelm Pfeiffer
Deputy Head

RESEARCH AREAS

- **Changing Labour Markets**
Contact: Dr. Melanie Arntz
- **Labour Markets in Organisations**
Contact: Jun.-Prof. Dr. Susanne Steffes
- **Education and Labour Market Entry**
Contact: PD Dr. Friedhelm Pfeiffer
- **Inclusive Labour Markets**
Contact: Dr. Michael Maier

MISSION STATEMENT

The Research Department “Labour Markets, Human Resources and Social Policy” investigates how institutions and working conditions in firms can facilitate the development of smart, sustainable and inclusive European labour markets. The Research Department specialises in the econometric assessment of policy impacts, including structural modelling techniques, and in the analysis of individual and employer–employee data. The Research Department has been cultivating its expertise in education and human resource economics in order to assess education and qualification measures as well as to study the effects of human resource policies implemented by firms. The Research Department lays a strong focus on structural changes in labour markets and the design of efficient labour market, education and social policies.



RESEARCH AREA: CHANGING LABOUR MARKETS

- Globalisation and Labour Markets
- Skill-Biased Technological Change
- Spatial Adaptation Processes

This research area studies the interrelationships between the international division of labour, the ongoing digitalisation of the working world, demographic changes, and employment and wage growth in labour markets. A key focus is placed on how macroeconomic phenomena impact the behaviour of individual economic agents. Researchers examine institutional and structural differences between Europe's regional and national labour markets in order to identify geographical disparities and understand the economic mobility of labour and capital.

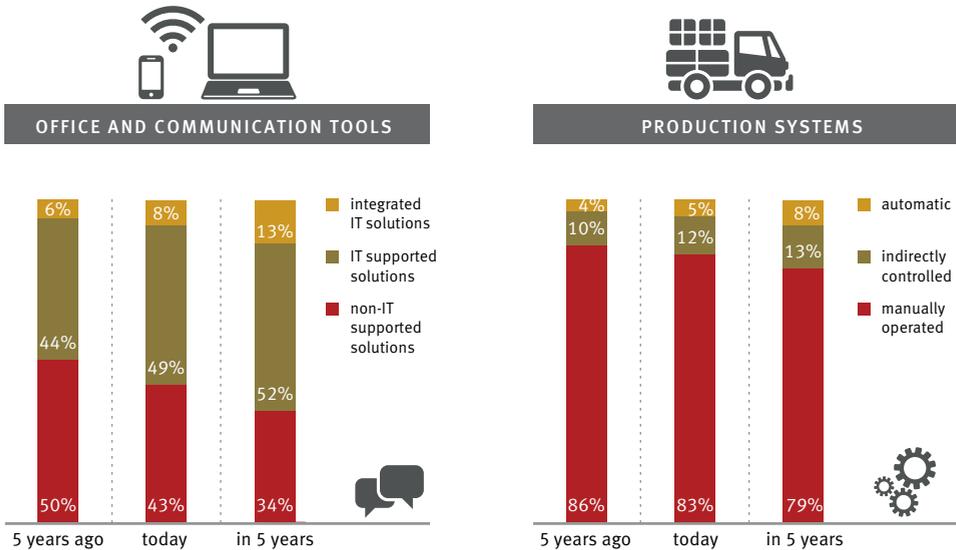
In the year under review, the research area continued its work on the future of labour in an increasingly digitalised and automated world. In a study conducted on behalf of the OECD that garnered considerable attention, ZEW estimated the risks to jobs posed by automation in 21 OECD countries. The study concluded that just nine per cent of jobs in OECD countries can be automated, far less than previously assumed. In contrast to past studies that have examined occupational categories, the ZEW study adopted a "task-based" approach to more accurately observe the characteristics of workplace activities.

On behalf of the Academy of Technical Sciences (ACATECH), economists in this research area also conducted a study on how the digital revolution is impacting the need for further occupational training. The IAB-ZEW study, which draws on data gathered in a new survey of over 2,000

companies, examined the use of Industry 4.0 by German firms. Specifically, it investigated the resulting changes to workplace processes and employee skill requirements. The findings, which were presented at the National IT Summit, show that half of German companies are already using Industry 4.0 solutions. However, only a small share of equipment and processes can be categorised as Industry 4.0. The use of fully automated processes is nevertheless clearly on the rise in German companies (see Figure 1).

Researchers in this area also continued work on an ongoing project being undertaken on behalf of the Federal Ministry of Education and Research. The project involves analysing the firm-level effects of digitalisation by linking data gathered in-house with administrative data maintained by the Federal Employment Agency. The goal is to identify the mechanisms by which jobs are being created and destroyed as well as to shed light on the winners and losers of the digital revolution.

1] LEVEL OF AUTOMATION AND DIGITISATION IN GERMAN BUSINESSES IN TERMS OF THEIR OPERATING RESOURCES



Source: IAB-ZEW Working World 4.0 Survey, calculations by ZEW

RESEARCH AREA: LABOUR MARKETS IN ORGANISATIONS

- Human Resource Management
- Ubiquitous Working
- Work and Health

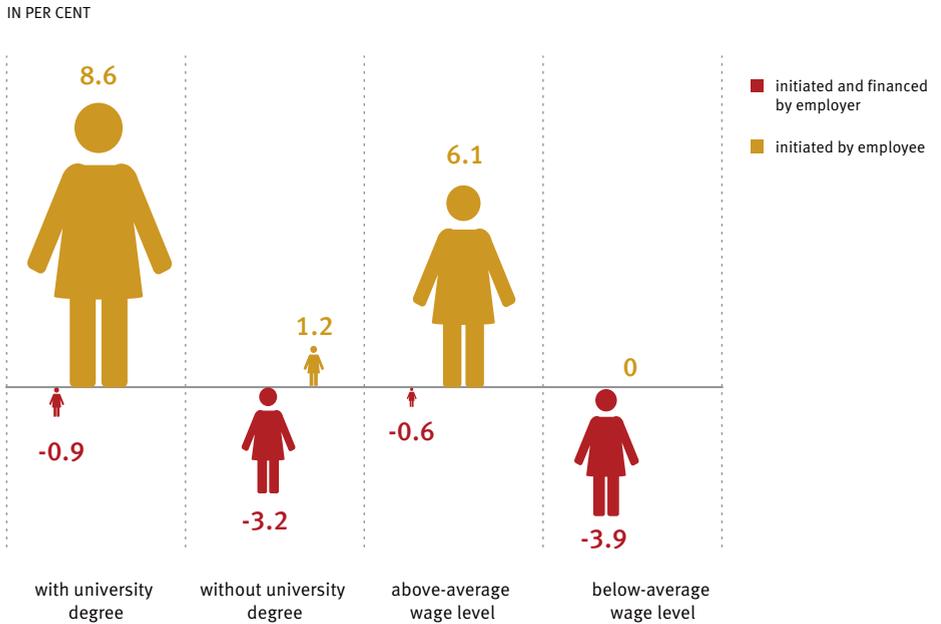
This research area investigates the relationships between employees and management as well as the impact of structural changes in the working world. It investigates the optimal organisation of human resource management and working conditions in order to promote and sustain worker productivity, performance and employability. This research focus combines expertise in human resources and business management with microeconomic methods.

In 2016 the research area investigated how digitalisation and demographic changes are influencing employees and human resource management. On behalf of the Federal Ministry of Labour and Social Affairs and the Federal Ministry for Economic Affairs and Energy, ZEW researchers conducted surveys among employers and employees. The findings show that technological change is increasing the need for employees to acquire new skills, yet at the same time, simplifying the activities performed by low-skilled workers.

The research area continued to study gender-related differences in labour market opportunities. An analysis carried out for the Federal Ministry of Labour and Social Affairs showed that women have worse career development prospects than men and also believe they are at a disadvantage professionally. However, the perception of disadvantage does not apply to human resource development measures (such as further education) or to company performance reviews. The study found differences between employee groups, such as part-time workers and executives.

A project on the determinants and effects of further education identified differences between employee groups. Women with low or mid-level qualifications had a 3.2 percentage point lower chance than their similarly qualified male counterparts of having their employers initiate and finance further education. However, women with a university degree have an 8.6 percentage point greater chance of initiating further education than their male counterparts. A similar picture emerges if comparative wage levels are examined (see Figure 2 on the following page). While companies invest less in non-career-oriented women, career-oriented women send a positive message by investing in their skills and abilities. A meaningful share of the difference in gender-specific investment in further education can be ascribed to the fact that women are more frequently employed on a part-time basis and less frequently have managerial roles. Gender-specific wage disparities cannot be attributed to further education participation rates.

2] DIFFERENCES IN CHANCES OF FURTHER TRAINING OF WOMAN AS COMPARED TO MEN



Source: WeLL-ADIAB data, calculations by ZEW

RESEARCH AREA: EDUCATION AND LABOUR MARKET ENTRY

- School-to-Work Transition
- Returns to Education
- Educational Policy Design

This research area investigates the educational development and labour market integration of young people. A key concern is identifying the knowledge and skills that enable a successful transition into employment. As part of their investigations, researchers explore educational processes in primary and secondary schools, universities, and in the workplace. In addition, researchers in this area evaluate how education policies and labour market institutions affect the transition from secondary school to higher education and individual career opportunities. To study these issues, expertise in educational economics is combined with microeconomic techniques.

Last year marked the successful completion of the Feasibility Study of the Baden-Württemberg Panel that was conducted on behalf of the Baden-Württemberg Foundation. In this study, researchers developed a design for conducting a representative dataset containing education and occupational histories. The study aimed to produce robust findings concerning the transition from school to work while also closing gaps in the existing research.

2016 saw the completion of the project “Students’ Transitions into Higher Secondary Education or Dual Education in Two Localities of Baden-Württemberg” on behalf of the Baden-Württemberg Foundation’s Network on Education Research, which examined factors determining the transition from the first to the second stage of their secondary school education. Among other things, it was revealed that student participation in educational counselling varies by school type. It was shown that regional initiatives to improve the career guidance offered to students have had positive effects.

Within the scope of a pilot study for the Baden-Württemberg Panel, a relatively small longitudinal survey was used for an intervention to examine how the way a survey is administered creates incentives for participation. One group of young people received a personalised invitation with the name and photograph of the researcher, while the second group did not receive a personalised invitation. The personalised invitations somewhat increased the willingness of young people to participate in the survey, particularly immediately after the invitation was received. However, the difference between the two groups was not statistically significant.

Following a new call for research applications announced by the Baden-Württemberg Foundation’s Network for Educational Research, economists working in this research area received approval for a new project. The project, which began last September, will investigate the effects of “career guidance measures” as well as participation in the “transition system”. The project will draw on panel survey data as well as school and social-insurance administrative data maintained by the state of Baden-Württemberg. In order to compare the study’s findings to the situation in Germany as a whole, the analysis will be expanded to include data from the National Educational Panel Study (NEPS).

Economists in this research area successfully secured funding from a grant programme run by the Federal Ministry of Education and Research. The three-year project that was awarded funding will examine the costs and benefits of switching majors or dropping out of university studies. The project, which is slated to begin on 1 May 2017, will be carried out in cooperation with the ZEW Research Group “International Distribution and Redistribution” and the Federal Employment Agency’s University of Applied Labour Studies.

RESEARCH AREA: INCLUSIVE LABOUR MARKETS

- Evaluation of Integration Measures
- Refugees and the Labour Market
- Employment and Wage Dynamics

The research area of “Inclusive Labour Markets” is concerned with individual and institutional factors that facilitate fair employment and personal development. Of particular interest are

groups with pronounced employment and income risks, such as low-skilled workers, older people, women with family obligations, the long-term unemployed and refugees. The research area investigates employment and wage dynamics as well as the determinants of successful transition into regular employment. It applies a broad range of micro-econometric tools to evaluate how labour market policies can build more inclusive labour markets.

In cooperation with the Heidelberg University of Education and numerous practicing professionals, economists in this research area are working on a project titled “Real-World Laboratory: Asylum Seekers”. The project, which is being funded by the Baden-Württemberg Ministry of Science, Research and the Arts, is investigating the factors that contribute to the successful integration of asylum seekers in the Rhine-Neckar region. In the first stage of the study, a survey of individuals living in refugee centres in Sinsheim and Wiesloch was conducted in collaboration with Professor Gerard van den Berg. More than 370 refugees from Afghanistan, Iraq, Syria and numerous African nations were surveyed in order to develop robust, real-world insights into factors influencing integration.

The first step in analysing this data was to create a cohort of young men between the ages of 18 and 32 who had not immigrated to Germany prior to 2011. On average, the members of this cohort had 9 years of formal education prior to arriving in Germany. Among those who had been employed prior to arriving in Germany, the average work experience was approximately six years. When the survey was conducted in September 2016, 12 per cent were employed. Those with a job worked on average 19 hours per week.

On behalf of the Federal Ministry of Labour and Social Affairs, economists in this research area will be partnering with several institutions up to 2020 to investigate the federal government pro-



In October 2016 Professor Francesc Ortega of Queens College, New York, presented his research findings on the influence of immigration regarding the use and the quality of public education at a ZEW Workshop on Assimilation and Integration of Immigrants.

gramme “Social Inclusion in the Labour Market”. This policy evaluation project, which is based on statistical data gathered by the Federal Employment Agency and supplementary surveys of the long-term unemployed concerning social inclusion, was considerably expanded by the Federal Ministry of Labour and Social Affairs in autumn 2016. In another project commissioned by the Federal Ministry of Labour and Social Affairs, researchers are investigating the use of project-specific work contracts as a potential alternative to standard employment in Germany. In the project, researchers are conducting company surveys gathering representative data on the prevalence of work contracts, their terms and conditions, and the specific problems they pose.

OUTLOOK

In the coming year, the Research Department will continue to make contributions to the evidence-based public debate on developments in labour market, education and human resource policy in Germany and Europe. In terms of specific topics, the Research Department will study the causes and consequences of the changing world of work and the associated societal and academic debates concerning polarisation tendencies in the labour market. The integration of refugees will represent another key subject area guiding the Research Department’s agenda.

In the coming year, research will be dedicated to analysing the consequences of digitalisation. The Research Department intends to contribute to the understanding of how digitalisation impacts employment and wages by analysing survey data gathered as part of the newly established IAB-ZEW Working World 4.0 database. The research possibilities of this database will be expanded in the coming year through the addition of an employee questionnaire to the company survey. Important topics of research will include how digitalisation induces changes with respect to working remotely, the desire of employees to excel, their willingness to pursue further education, and employee retention.

The Research Department will examine how employment is in a state of flux. Among other areas, the Research Department will intensify its research into the economic integration of refugees, who have been arriving in Germany in large numbers. Against the backdrop of the changing requirements of the labour market, additional attention will be devoted to studying how young people transition between different stages of the educational system. The costs and benefits of changing university majors or discontinuing one’s studies will also be examined.

In cooperation with the new “Market Design” Research Group, the Department’s researchers intend to explore how the insights obtained in market design research can be applied to enrich labour market and educational research. Compelling opportunities for joint research are evident in a number of areas – for example, in the use of matching approaches in labour markets or in the allocation of preschool slots and university places.

» UPDATING TRADITION FOR FUTURE MARKETS.



Prof. Dr. Irene Bertschek
Head of the Research Department
Digital Economy





transfor
mation

RESEARCH DEPARTMENT DIGITAL ECONOMY



Prof. Dr. Irene Bertschek
Head of Department



Dr. Jörg Ohnemus
Deputy Head

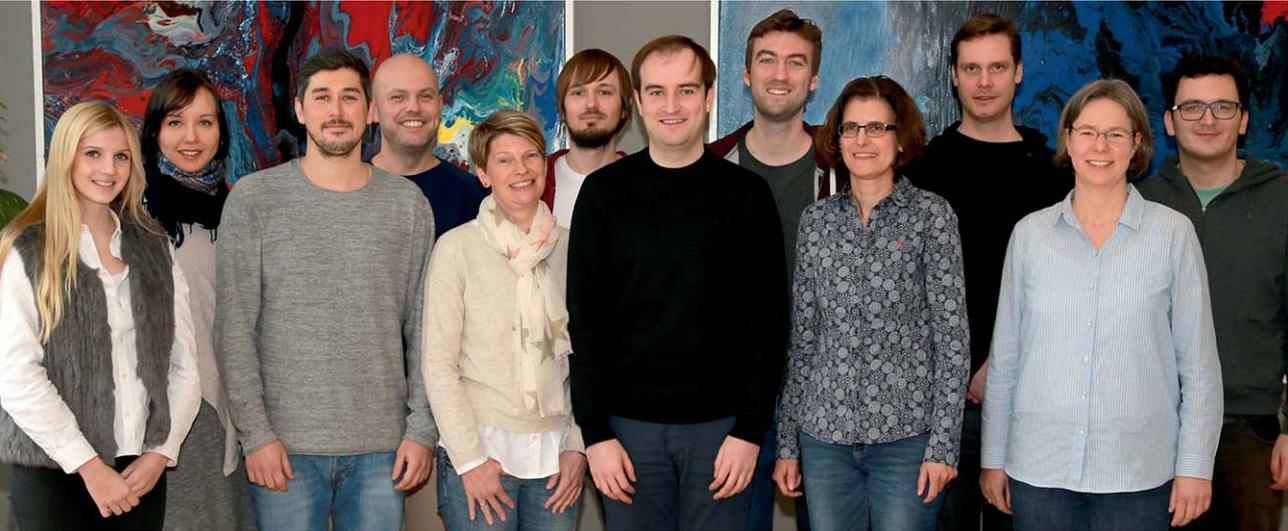
RESEARCH AREAS

- **Diffusion and Growth Potential of ICT**
Contact: Dr. Jörg Ohnemus
- **ICT, Markets and Corporate Strategies**
Contact: Prof. Dr. Irene Bertschek
- **Digital Networks and Knowledge Acquisition**
Contact: PD Dr. Marianne Saam

MISSION STATEMENT

The “Digital Economy” Research Department (formerly: “Information and Communication Technologies”) studies the impact of digitalisation on economic processes. It investigates changes in production, innovation, and the working world brought about by digitalisation, as well as digital markets and platforms. The Research Department’s work provides a foundation for evidence-based policy decisions in order to allow the benefits of ICT for smart value-added production, sustainable usage of natural and immaterial resources, and inclusion of people in the generation of knowledge and wealth to be leveraged at the national and European levels.

The researchers in the Department conduct empirical research, using econometric methods to analyse data gathered from in-house company surveys, Internet platforms, and macroeconomic databases. This makes the Research Department an important centre in Germany for the economic analysis of digitalisation.



RESEARCH AREA “DIFFUSION AND GROWTH POTENTIAL OF ICT”

- ICT and Media Sector, Knowledge-Intensive Service Providers
- Business Cycles of the Information Economy
- Mobile Internet, Cloud Computing, Green IT
- Macroeconomic Effects

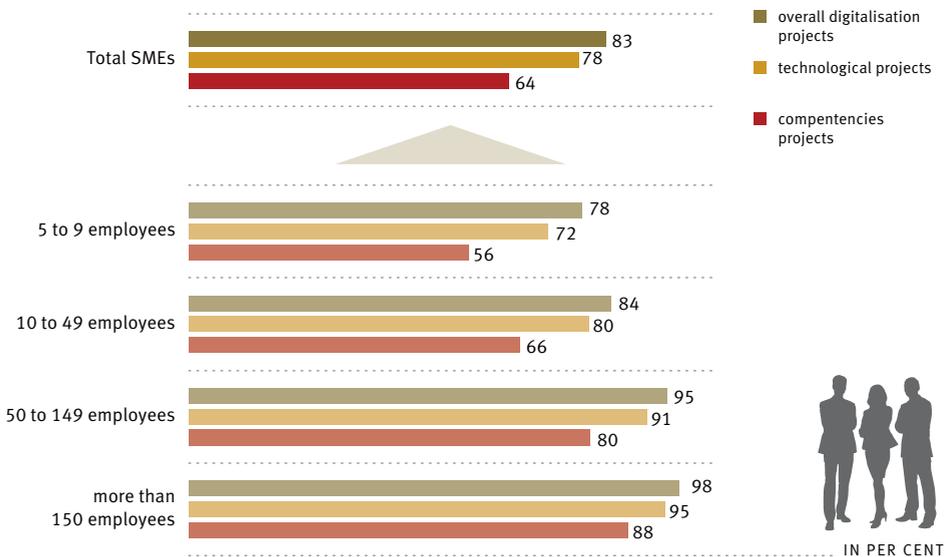
The “Diffusion and Growth Potential of ICT” research area is concerned with the diffusion of ICT, companies’ successes in the production and use of ICT and the macroeconomic effects of these processes. Economists in this area conduct surveys to investigate the adoption of different ICT applications in business, companies’ goals in using ICT and the obstacles and limitations companies face. Macroeconomic relationships are investigated through projections and the use of external macroeconomic data.

In 2016 the Research Department completed a study on the digitalisation as it relates to Germany’s small and medium-sized enterprises (SMEs). The study was conducted on behalf of the German government-owned development bank KfW Bankengruppe. The study investigated manufacturing and service-sector companies with at least five employees and no more than 500 million euros in annual revenues. Current public discussion concerning the digitalisation of the economy is marked on the one hand by visions of impending and radical transformation, and on the other hand by concerns that many companies are asleep at the switch. The ZEW study shows that Germany’s SMEs are well aware of the importance of this topic, but that the implementation of new technologies is occurring at a very measured pace. More than four out of five German SMEs

carried out digitalisation projects in 2013–15. The study defined “digitalisation projects” as any activity to expand or improve IT capabilities or IT-related skills. Recurring expenditures or investments to replace existing resources were not considered. Some 78 per cent of firms implemented technology projects (including the adoption of new hardware, software and IT security measures). At the same time, 64 per cent of companies undertook projects to improve their capabilities and human resources in the area of IT (including IT training, consulting, workflow reorganisation and the adoption of new online sales methods) (see Figure 1). Across firms in all size categories, technology projects were more common than projects to improve IT-related capabilities. This relative lack of investment in IT-related capabilities could explain why the technological opportunities offered by digitalisation have yet to be fully exploited in all areas of the economy.

Taking a closer look at the cost of digitalisation projects, we find that most projects involved relatively small investments. While 17 per cent of companies made no investments in digitalisation projects in 2013–15, 46 per cent invested less than 10,000 euros annually during this period. Among companies with more than 150 employees, 48 per cent spent more than 100,000 euros annually, yet such figures must be weighed in relation to company revenues. Accordingly, we find that German SMEs are aware of the importance of digitalisation but have been taking “baby steps” in their adoption of new systems and skills. Policy-makers would be well advised to take into account the gradualistic nature of progress to date when designing regulatory interventions in this area.

1] ENTERPRISES IMPLEMENTING DIGITALISATION PROJECTS 2013–2015



All values are projected to the population level of enterprises with more than 5 employees.
Source: ZEW ICT Survey 2015 and additional survey 2015/16.

RESEARCH AREA “ICT, MARKETS AND CORPORATE STRATEGIES”

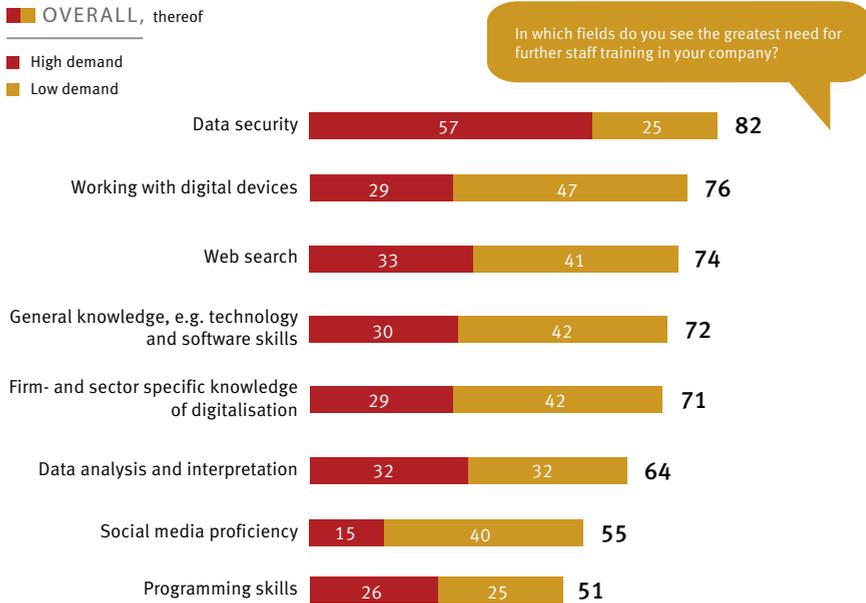
- Productivity and Innovation
- Internationalisation and Outsourcing
- Digital Production and Work Processes
- Online Markets
- Aspects of Competition Economics

The “ICT, Markets and Corporate Strategies” research area focuses on studying the motives behind and consequences of the implementation of ICT applications and complementary business strategies. The aim is to discover how companies can best use ICT to make the most of the potential benefits to innovation and productivity it offers.

In 2016 the Research Department once again collaborated with TNS Infratest to produce a report on the status of the digital economy titled “Wirtschaft DIGITAL”. This work was conducted on behalf of the Federal Ministry of Economic Affairs and Energy. In-house company training as it relates to the digital revolution was one key topic addressed by the 2016 report. More than two-thirds of surveyed companies believed that in-house IT training would be “important” or “very important” in the coming years. IT security is the subject area in which the need for staff training is most pressing, the companies said (see Figure 2 on the following page). The need for IT security training is particularly acute in sectors in which sensitive data play an important role, including the ICT sector, knowledge-intensive service sector, and health care. The survey responses that were received concerning the need for training in this area underscore that companies are very aware of the importance of data as an economic factor. Small businesses emphasised a relatively strong need for improving the basic internet usage skills of their staff members.

The social media strategies used by companies have been a topic of study in this research area for many years. While social media have become an important aspect of daily life for a broad segment of society, little research has been conducted to date into how social media can contribute to company performance. Drawing on data from the 2015 ICT survey, a recent ZEW discussion paper investigated how companies make use of their Facebook pages. In the study, the authors linked company data with information from their Facebook pages. Econometric estimations revealed that when companies have a Facebook page and also receive extensive user feedback through Facebook, they are more likely to realise product innovations. Interestingly, there is a strong correlation between negative user feedback and the likelihood of a company realising product innovations. One possible explanation is that these companies harness user feedback to improve their products and services or develop new ones. The study’s findings remain robust when one corrects for the fact that particularly innovative companies are more likely to have a Facebook page. The study did not address process innovations, as internal company processes are not amenable to outside critique by Facebook users.

2] DEMAND FOR FURTHER TRAINING



Source: Federal Ministry for Economic Affairs and Energy: Monitoring Report "Wirtschaft DIGITAL 2016"; "High/low demand" in per cent

RESEARCH AREA "DIGITAL NETWORKS AND KNOWLEDGE ACQUISITION"

- Digital Media
- Social Networks
- User-Generated Content
- Design and Function of Digital Platforms

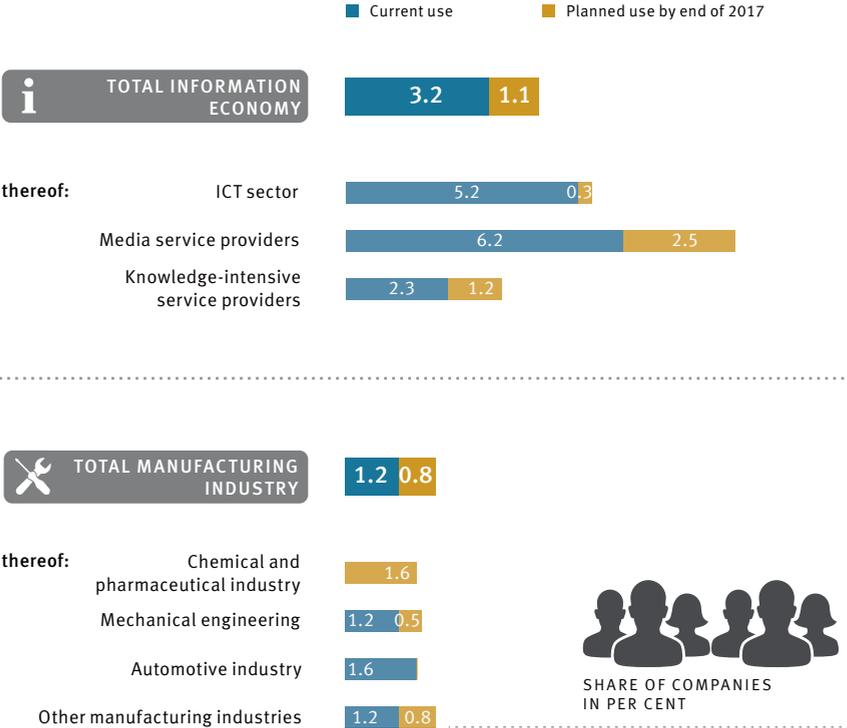
In the "Digital Networks and Knowledge Acquisition" research area, researchers examine the private and professional activities of individual Internet users and their effects. Special attention is paid to user activity on digital platforms such as Wikipedia or crowdworking platforms, as well as the information assets and network structures that emerge from them.

In a study that was conducted in 2016 on behalf of the Federal Ministry of Labour and Social Affairs, ZEW researchers studied companies' use of and perceptions toward crowdworking platforms. Crowdworking platforms enable companies to outsource activities traditionally conducted in-house to external service providers. Such platforms are typically used to outsource high-volume, repetitive tasks. While just 55 per cent of companies in the ICT sector were aware of this new

form of outsourcing in 2014, more than three-quarters said they were familiar with it in 2016. In the manufacturing sector the term is now known to around 70 per cent of companies. However, increasing awareness has not been associated with increasing use by companies. In 2014 and again in 2016, just over four per cent of ICT companies said they currently use or plan to use crowdsourcing in the coming year (see Figure 3). However, a much higher percentage of companies indicated they could imagine using crowdsourcing in the future. This opinion was also voiced in the service and manufacturing sectors.

In the topic area of digital platforms, a study conducted in cooperation with external researchers investigated hotel booking websites. Many hotel booking sites have “best price” clauses that forbid hotels from offering better prices and conditions through other sales channels. In December 2015 Germany’s Federal Cartel Office issued a directive forbidding Booking.com from using a “best price” clause. The ZEW study investigated the effects of best price clauses by exa-

3] CURRENT AND FUTURE USE OF CROWDWORKING



6.2 per cent of media service providers already use crowdsourcing. 2.5 per cent of them are planning to do so by the end of 2017. Source: Federal Ministry of Labour and Social Affairs and ZEW

mining this natural experiment. The study showed that hotels more frequently offered rooms at their own websites after the best-price clause was abolished. Compared to other European countries, there was a five percentage point increase in the use of direct sales by German hotels in the period after the clause was abolished. At the same time, the number of hotels using Booking.com in Germany increased by approximately 20 per cent in the six month period after the Cartel Office's ruling. Furthermore, hotels are now more likely to offer lower prices at their own websites than at Booking.com, and usually a hotel's own website is the sales channel with the lowest prices. The study indicates that Booking.com's best price clause constrained free price determination by hotels, thus potentially impairing competition between sales channels. An interesting finding is that hotels were more likely to offer rooms through Booking.com after the best price clause was abolished. The abolishment of the clause was thus advantageous for Booking.com, at least in this respect.

OUTLOOK

The medium and long-term diffusion of digital technologies – including the growth potential they unlock – will remain an important subject of study for researchers working in this Department in the years ahead. A key concern relates to the development of appropriate metrics for observing digitalisation, as this is a diffuse and multi-faceted phenomenon.

Researchers in this Department will continue to draw on company data they have collected in-house in order to examine corporate strategies that are based on ICT. In particular, researchers will study how ICT-driven competitive strategies impact innovation, productivity and workflows. A number of future research projects will rely on data gathered in ZEW's five-wave ICT survey (2002–2015) and quarterly economic survey in the information sector. Researchers are increasingly linking company data gathered in-house with external sources of data (e.g. from social media) in order to examine relationships between companies and customers, including associated impacts to business performance. In the future, the Department will increasingly study how social media is used by companies to undergird their efforts to innovate.

The design features of digital platforms will be an important subject of research in coming years. For example, online rating functions (e.g. guest feedback at hotel booking sites) disclose a considerable volume of information about offered products and services. In the coming years, the Department will devote increased theoretical and empirical attention to the online rating of products and services, including how such feedback is structured and its attendant impacts on the activities of service providers. Last but not least, the Department intends to pursue cooperative activities with ZEW's newly established "Market Design" Research Group.

» DISRUPTIVE INNOVATION MAKES WAY FOR NEW THINGS.



Dr. Georg Licht
Head of the Research Department
Economics of Innovation and
Industrial Dynamics





innovation

RESEARCH DEPARTMENT ECONOMICS OF INNOVATION AND INDUSTRIAL DYNAMICS



Dr. Georg Licht
Head of Department



Jürgen Egel
Deputy Head



Prof. Dr. Bettina Peters
Deputy Head



Dr. Christian Rammer
Deputy Head

RESEARCH AREAS

- **Innovation Processes in Firms**
Contact: Prof. Dr. Bettina Peters, Dr. Christian Rammer
- **Intellectual Property Rights and Intangible Investments**
Contact: Dr. Georg Licht, Dr. Philipp Böing
- **Industry-Science Linkages and Technology Transfer**
Contact: Dr. Maikel Pellens, Dr. Christian Rammer
- **Firm Foundations and the Growth of Start-ups**
Contact: Jürgen Egel, Dr. Bettina Müller
- **Firm Closures**
Contact: Dr. Sandra Gottschalk, Dr. Georg Licht
- **ZEW Research Data Centre**
Contact: Dr. Sandra Gottschalk

MISSION STATEMENT

The Research Department “Economics of Innovation and Industrial Dynamics” investigates the behaviour of firms under dynamic market conditions. The Department conducts empirical analyses on a range of topics, including the innovation behaviour of firms, the division of labour among participants in the innovation system, the sharing of research findings between firms and research institutions, market entries and exits, and the development of (young) firms. The research projects pursued by the Department identify challenges faced by firms and policymakers, and analyse and evaluate associated policy measures. Goods and factor markets that are either insufficiently organised or not fully developed often furnish the basis for the Department’s assessment of policy interventions.



KEY EVENTS IN 2016

In 2016, the Research Department cooperated with the Mannheim Centre for Competition and Innovation (MaCCI), the German Graduate School of Management & Law in Heilbronn, and the University of Mannheim's Institute for SME Research to host the third "International Conference of the Dynamics of Entrepreneurship". The conference aimed to promote discussion among international researchers on a broad range of subjects related to entrepreneurship and start-ups.

In addition, the Research Department organised five workshops. The workshop "Innovation in Firms: Proposals for Better Measurement" took place within the context of the ongoing review of the Oslo Manual, which sets forth international standards for the measurement and interpretation of innovation. During the workshop, over 30 researchers from 13 countries discussed the strengths and weaknesses of current approaches for measuring firm innovation, and developed strategies for improving definitions and metrics.

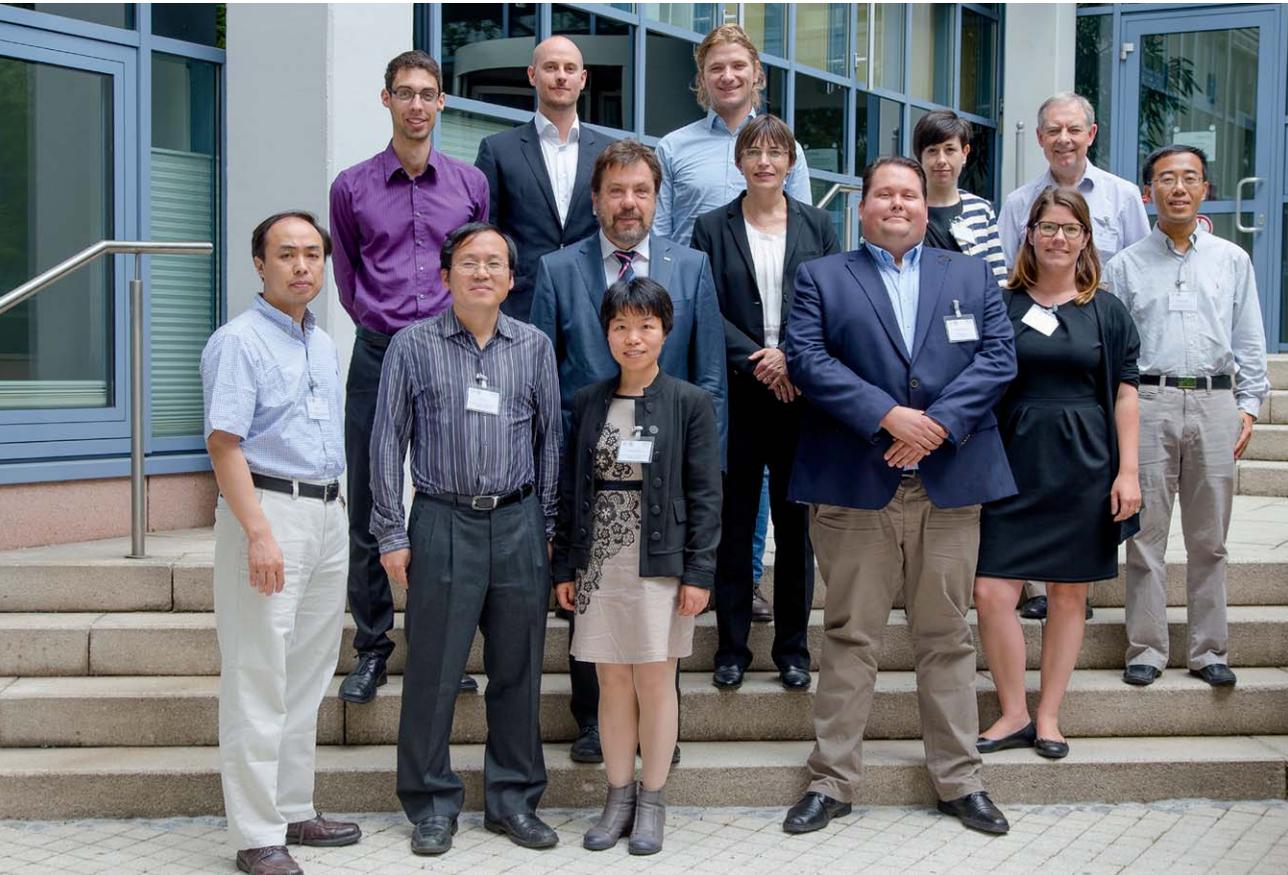
Each year, the Research Department collaborates with the KU Leuven and the universities of Luxembourg, Maastricht and Turin to organise a workshop for PhD students in which the latter have the opportunity to present initial research findings in front of a large group outside their own faculties. This year, the workshop took place at ZEW. Over the course of two days, a total of 15 young academics presented their papers, which included research on innovation, company start-ups and intellectual property, and received feedback and suggestions for improvement from eleven experienced researchers from the five participating institutions.

The Research Department organised the workshop "From Europe to China: Exploring New Frontiers in Economics of Innovation and Entrepreneurship" in a joint collaboration with the Research Center for Technological Innovation (RCTI), affiliated with Tsinghua University in Beijing. This workshop aimed to promote dialogue between European and Chinese researchers conducting theoretical and empirical research on innovation and start-ups. The keynote speakers were

Professor Pierre Mohnen (UNU-MERIT and University of Maastricht) and Professor Paul Unschuld (Charité University Hospital in Berlin).

Finally, a workshop hosted by the Research Data Centre offered researchers the opportunity to present and discuss papers based on ZEW survey data.

In 2016, two staff members within the Research Department completed their doctorates. Florence Blandinières' dissertation was entitled "A Methodology to Assess the Relevance of Division of Innovative Labor in Medical Innovation", while Martin Murmann's chosen field was "Human Capital of Employees in New Ventures".



The participants of the Tsinghua ZEW Workshop "From Europe to China: Exploring New Frontiers in Economics of Innovation and Entrepreneurship"

RESEARCH AREA “INNOVATION PROCESSES IN FIRMS”

- Indicators and Measurement of Innovation Activities
- Determinants of Corporate Innovative Behaviour
- Innovation Strategies in Firms
- Effects of Innovations on Firms and Macroeconomic Variables
- Conception and Evaluation of Research and Innovation Policy Instruments

Economists in this research area analyse R&D activities using empirical methods. They seek to examine both firm-specific and institutional factors that influence decisions about innovation and determine an innovation’s success. In addition, researchers study the impact of innovation on firm performance and macroeconomic growth. Much of the work conducted in this research area is connected to the Mannheim Innovation Panel (MIP), which forms the basis for German innovation statistics and is Germany’s contribution to the Community Innovation Surveys (CIS). Researchers use microeconomic techniques to study the innovation behaviour of firms and the effects of government innovation policy in order to draw conclusions on how markets for new products and services should be optimally designed and regulated.

How to best measure the innovation activities of firms and how to best design innovation policy instruments were two key areas of research in 2016. In addition, empirical analyses on various topics were performed using data from the MIP and Community Innovation Survey (CIS), which resulted in a high number of scientific articles.

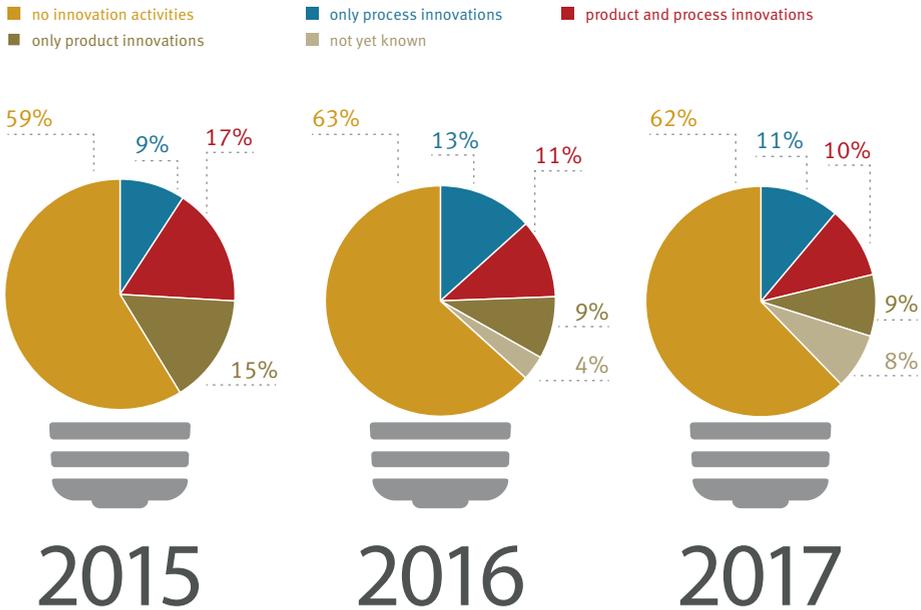
In 2016, the Research Department played an active role in the revision of the OECD’s and Eurostat’s Oslo Manual. The Oslo Manual forms the conceptual basis for innovation surveys in the corporate sector in a large number of countries. The ongoing revision process seeks to critically evaluate the approaches used to define and measure innovation, and to take into account altered underlying conditions, whether from globalisation, digitalisation or new forms of innovation. The revision process is due to be complete by the end of 2017.

A series of studies and research projects addressed current innovation policy issues. Together with Professor Spengel at the University of Mannheim, an expert report concerned with the introduction of an R&D tax incentive in Germany was conducted on behalf of the Commission of Experts for Research and Innovation (EFI). In this connection, research focused on how such an instrument would influence R&D expenditures and the innovation outcomes of firms. Furthermore, researchers examined the extent to which an R&D tax incentive might affect different categories of firms (in terms of sector and size). In another study conducted for EFI, researchers examined how policies for promoting research and innovation in Germany can be tracked with an indicator system. In a study undertaken on behalf of the company SAP, economists in this research area cooperated with the Research Department “Digital Economy” and the Research Group “Competition and Regulation” to illuminate the demands placed on innovation policy in the age of digitalisation. As part of this project, ZEW researchers performed a detailed analysis of innovation- and growth-oriented start-ups, and also examined how firms finance innovation. Drawing on

survey data, the Department collaborated with Prognos to investigate possible trends among German SMEs in the coming decade, identifying challenges and drawing up recommendations for action in an expert report that was produced for the Federal Ministry for Economic Affairs and Energy. In 2016, the Research Department was once more actively involved in the evaluation of innovation policy instruments. How R&D funding measures at the European level support the innovation activities of German SMEs was examined on behalf of the Federal Ministry of Education and Research. This study aimed to evaluate the effectiveness of the joint funding programme Eurostars, one of the more recent instruments developed as part of R&D policy, which is coordinated by several European partner countries.

The Mannheim Innovation Panel (MIP) constitutes a key source of information for the Department’s research activities. MIP data were used to demonstrate that the planned innovation activities of firms in Germany are in decline (see Figure 1). This trend is primarily attributable to firms lacking in-house R&D activities; such firms have been increasingly abandoning R&D efforts. The MIP is the Research Department’s longest-running project and a key pillar of ZEW’s research data infrastructure. The MIP is an annual panel survey on the innovation behaviour of German firms that has been conducted since 1993 on behalf of the Federal Ministry of Education and Re-

1] PLANNED INNOVATION ACTIVITIES OF FIRMS IN GERMANY IN 2016 AND 2017



* 2015: Implemented innovation projects (for comparison only)

Source: ZEW, Mannheim Innovation Panel

search. A great number of outside researchers have conducted studies using MIP data. In 2016, ZEW was granted funding to continue its innovation survey activities in the coming years.

RESEARCH AREA “INTELLECTUAL PROPERTY RIGHTS AND INTANGIBLE INVESTMENTS”

- Intellectual Property Rights and Innovation Incentives for Firms
- Enforcement of Intellectual Property Rights
- Intangible Investments
- Markets for Technology
- Global Developments of Intangible Investments and Patent Applications

Researchers in this area investigate measures designed to safeguard revenues generated by investments in technology and in new goods and services. On the one hand, patents and trademark rights help to safeguard returns to innovation, yet, on the other hand, they also impede the spread of technological transformation. The research area’s focus is on patents and trademarks, which are commercial property rights granted to the providers of new technology. In this context, the incentives and impediments created by various property right regimes are considered in cooperation with legal scholars, and patent infringement processes are analysed. The Research Department determines market characteristics that obstruct the optimum parity between inventor protection and technological diffusion, and develops proposals for the structuring of knowledge and technology markets. The productivity effects of investments in intangible assets constitute a further research topic.

In the project “Investigating the Impact of the Innovation Union”, which is funded by the EU’s “Horizon 2020” framework programme for research, ZEW researchers are evaluating the Innovation Union, one of the seven flagship initiatives within the Europe 2020 strategy for smart, sustainable and inclusive growth. The Innovation Union comprises a range of measures. ZEW researchers are collaborating with eight leading European research institutes to address a total of four topic areas. Specifically, researchers are: (1) assessing the effects of the planned introduction of the EU Unitary Patent and the establishment of a unified system for adjudicating patent disputes in Europe; (2) investigating the consequences of the new EU public procurement directive, which facilitates the awarding of public contracts for innovative products and services; (3) studying the extent to which the new EU regulation accelerates standardisation processes in Europe while also promoting innovation; and (4) examining trade and the licensing of intellectual property rights, as well as the optimal design of Europe’s technology market.

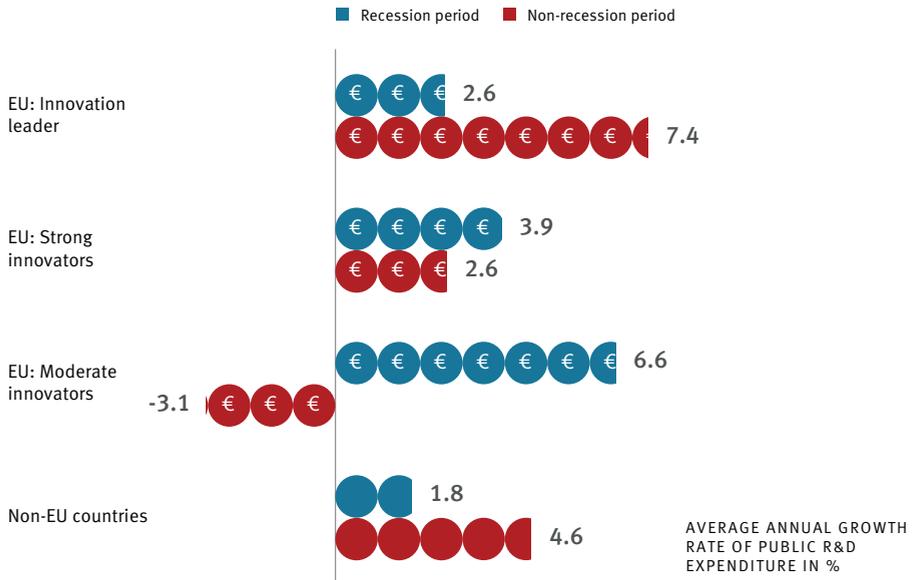
In the project “Creativity for Innovation and Growth in Europe”, completed in 2016, researchers developed new, holistic approaches for the scientific examination of the link between creativity and innovation as well as for studying the dynamics governing cultural and creative economies. In this context, one issue explored was the protection of intellectual property within the field of cultural and creative economies using copyright and design rights. Drawing on CIS data

from 26 countries, it was shown that the use of copyright and design rights correlates with a higher probability of product innovations.

In the project “Use of Trade Secrets to Protect Innovations”, researchers are investigating the economic significance of business secrets and their relationship to intellectual property rights, as well as other strategies used by firms to derive revenues from their innovations. The study specifies existing protective measures and analyses their impact on preventing violations of intellectual property rights within the EU.

In the FP7 project “Smart Public Intangibles” (SPINTAN), completed in 2016, ZEW researchers conducted a theoretical and empirical investigation of intangible assets in the public sector. Working within a consortium, the participating economists explored how total public expenditure on R&D varies in relation to the business cycle, and whether cyclically induced shifts in public R&D expenditures can be observed in specific sectors or between various recipients. Among other findings, the project determined that highly innovative EU countries pursue anti-cyclical innovation

2] GROWTH RATE OF PUBLIC R&D EXPENDITURE ACCORDING TO BUSINESS CYCLE AND INNOVATION PERFORMANCE, 1995–2015



Source: ZEW

policies, meaning that public research expenditures tend to increase during times of crisis. By contrast, public research expenditures in EU countries deemed “strong” or “moderate” innovators exhibit a pro-cyclical trend, thus widening the innovation gap in Europe (see Figure 2).

RESEARCH AREA “INDUSTRY-SCIENCE LINKAGES AND TECHNOLOGY TRANSFER”

- Linkages Between Public Research and Private Innovation
- Research Infrastructure and Technology Transfer
- Innovation Policy Stimulation of Technology Transfer and its Evaluation
- Researcher Mobility
- Effects of Public Research Funding

This research area addresses various issues at the interface between innovation processes in firms and research in scientific institutions. In particular, researchers investigate the role of small and medium-sized enterprises in the field of technology transfer, the effects of scientific partnerships on the ability of firms to innovate, university spinoffs, and transfer-oriented incentive systems in scientific institutions, including the structuring of patent law at universities. The market for licenses and patents within public research as a technology transfer mechanism is another area of interest. In this connection, findings from the subfield of market design research are often applied.

In the “Science4KMU” research project, which is being undertaken in partnership with external researchers, ZEW economists are examining the obstacles to the transfer of new technology between public research institutions and SMEs. The project seeks to develop a model for collaboration between research institutions and R&D-intensive SMEs. In addition, instruments are being developed to identify technology-oriented SMEs that are capable of and prepared to engage in an intensive collaboration with research institutions in the field of basic research. The “Science4KMU” project is a collaborative undertaking involving the Leibniz Institute for New Materials (INM), the Institute for Industrial Computer Sciences and Business Organization (IBO) at the University of Applied Sciences in Saarbrücken, and ZEW. Research is focusing on technology transfer in the area of materials sciences, which is an interdisciplinary field. The project aims to develop a model for cooperation and present it in a handbook that is applicable to other interdisciplinary fields. To this end, the INM and IBO are investigating the human resources, infrastructure, and financial resources required by research institutions and SMEs in order to transform innovative ideas into reality.

RESEARCH AREA “FIRM FOUNDATIONS AND THE GROWTH OF START-UPS”

- Indicators and Measurement of Firm Foundations
- Determinants of Firm Growth
- Human Capital Structures in Young Firms
- Family Firms and Hidden Champions
- Financing of Young Firms
- Evaluation of Support for Firm Foundations

This research area maintains a wide range of indicators on start-up activity in Germany. Assessing the conditions that mediate market entry and firm growth is a key focus of research. In this connection, researchers can draw on two unique databases: the Mannheim Enterprise Panel (MEP) and the IAB/ZEW Start-up Panel. These databases make a valuable contribution to improving the informational basis for the study and promotion of start-ups. They are a comprehensive, continually updated resource that aids policymakers seeking to improve the regulatory and policy conditions for young entrepreneurs in Germany. Using these databases, researchers in this area investigate opportunities for improving subsidy mechanisms for young firms. They also investigate the quality of regulatory conditions for the development, implementation and diffusion of new business models.

The Mannheim Enterprise Panel (MEP) is the result of a long-term collaboration with Creditreform. On a regular basis, Creditreform provides ZEW with access to its comprehensive corporate database for use in scientific projects. The data provide a detailed picture of market entries and exits in Germany.

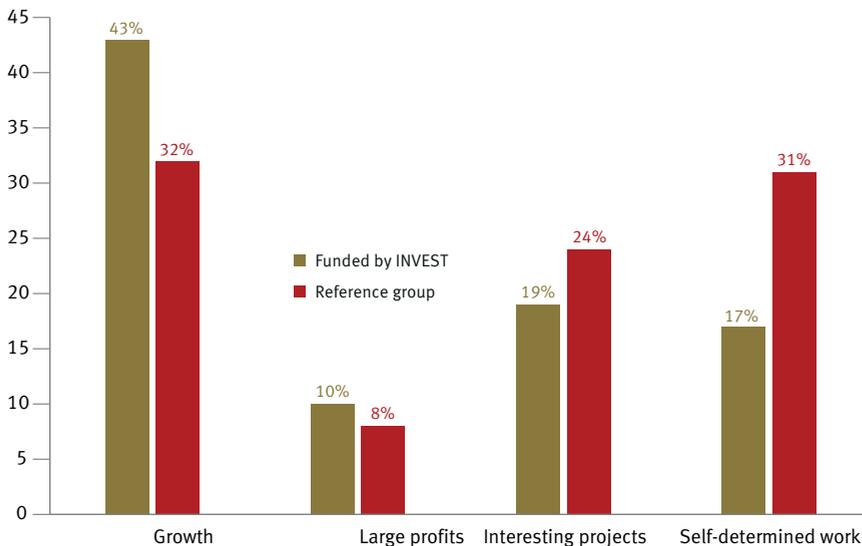
One project in which the MEP played a key role in 2016 was “The Economic Importance of Family Enterprises”. In this project, the research area developed an overview of the corporate landscape in Germany for the fourth time since 2009 while analysing the specific characteristics of family firms. This work was undertaken in collaboration with Creditreform and the Institute for SME Research at the University of Mannheim. Over 90 per cent of firms in Germany are family-run. On average, family firms are small enterprises with less than ten staff members, yet they employ over half of the corporate sector workforce and generate more than 50 per cent of its turnover. The list of the 500 largest family firms is headed by the Schwarz Group, followed by Robert Bosch GmbH and the Metro Group. As part of this project, researchers also analysed on firms’ creditworthiness for the first time.

In 2016, a further partner was acquired for the Start-up Panel that is based on MEP data. Starting with the 2016 survey wave, the project is being implemented jointly with the Institute for Employment Research (IAB) in Nuremberg. The IAB will be a valuable partner for the further development of this dataset, complementing the existing partnership with Creditreform. This close collaboration with IAB represents the further development of a partnership that started with the SEEK project “Human Capital Formation in Young Firms and the Crisis: A Comparative Analysis Between Portugal and Germany”. The IAB/ZEW Start-up Panel was originally established in 2008 as the “KfW/ZEW Start-up Panel”, and was formerly known as the “Mannheim Start-up Panel” in 2014 and 2015.

The data collected by the IAB/ZEW Start-up Panel is being linked with the Federal Employment Agency's "Integrated Employment Biographies" (IEB) as part of a project titled "Firm Dynamics and the Career Opportunities of Founders and Employees in New Ventures". This has enabled the creation of a "Linked Employer-Employee" dataset, allowing employees' educational and professional history to be considered when analysing the development of young enterprises. In specific terms, the project is investigating the extent to which firm founders use their professional networks to recruit suitable employees for their firms, and how the market exit of a start-up impacts the subsequent career histories of founders and employees.

In addition to expanding and enhancing databases, the Research Department's work focused on two projects concerned with the venture capital financing of start-ups. In a joint project with Creditreform and the VDI Technology Centre in Düsseldorf, ZEW researchers evaluated the subsidy programme "INVEST – Subsidy for Venture Capital". The Federal Ministry for Economic Affairs and Energy introduced INVEST in 2013 with the aim of mobilising more venture capital from private investors in Germany. Participating investors receive a tax-free subsidy equal to 20 per cent

3] SHARE OF FIRMS SUPPORTED BY THE INVEST PROGRAMME ACCORDING TO THEIR CORPORATE GOALS



Source: IAB/ZEW Start-up Panel 2015, ZEW survey among firms supported by the INVEST programme

of the amount they invest in a start-up. The evaluation study investigated the programme's effects on the supply side of the venture capital market and the characteristics of young, capital-seeking enterprises. Between the programme's launch in May 2013 and November 2015, venture capital investments totalling 104 million euros made by 1,253 private investors in 536 innovative firms were supported by INVEST. It was shown that an average of 50 cents was added to each euro in funding granted by angel investors. The young enterprises provided with support are highly innovative and, as Figure 3 shows, extremely growth-oriented. However, one of the largest shortcomings of the INVEST programme is its lack of prominence to date.

"The Role and Impact of Business Angels in Financing Research and Innovation" is a project funded by the European Commission that is seeking to map the activity of business angels in Europe in a comprehensive, internationally comparative manner. The aim is to examine how, when and why business angels invest; how investment varies between individual countries; the role played by innovation in investment decisions; and how policymakers can support angel investment. The project is being conducted jointly with INOVA+ and with the support of two leading business angel networks in Europe.

RESEARCH AREA "FIRM CLOSURES"

- Defining Types of Firm Closure
- Effects of the Reform of Insolvency Law
- Structural Transformation and Firm Closures
- Corporate Succession and Transfer of Businesses
- Macroeconomic Effects of Firm Turbulence

This research area focuses primarily on the empirical analysis of various forms of market exit, ranging from voluntary closures and takeovers to insolvencies. Among other things, they investigate the causes of the early failure of firms and the significance of business experience in the success of a restart after failure. Particular attention is devoted to the regulation of insolvency and restructuring law, which has witnessed significant reforms in recent years. In this connection, researchers are studying whether new mechanisms have improved the selection of viable firms for restructuring, and whether the expansion of restructuring measures has led investors to become more wary when granting financing. In addition, researchers are examining the role of banks in the restructuring of firms experiencing financial difficulties, and the effects of various aspects of insolvency law reform. Last but not least, researchers in this area analyse the determinants and effects of takeovers and mergers.

As part of the "Indicator Study 2017" project, ZEW economists developed and assessed various indicators of technological performance. This work represented a contribution to the annual report published by the Commission of Experts for Research and Innovation (EFI) concerning the status of research, technology and innovation in Germany. The project used indicators to collect information on firm dynamics while placing a particular emphasis on the knowledge economy, and also took an international perspective.

In a project titled “Practices and Effects of Insolvency Procedures – An Empirical Analysis of the Economic Impacts of the Insolvency Reforms in Germany” researchers are investigating the impact of the 1999 and 2012 reforms to German insolvency law. The reforms aim to improve restructuring measures in order to enhance survival rates for insolvent firms. In a nutshell, the study seeks to measure the overall effectiveness of the new insolvency procedure in assuring the survival of firms that are viable after restructuring. Researchers are focusing in particular on when insolvency is declared in order to ascertain whether the early filing of insolvency can improve firm survival rates. Moreover, the extent to which insolvency judges and administrators display individual preferences with a view to the liquidation or reorganisation of firms is being addressed. It seems that the probability of firms undergoing reorganisation is largely dependent on the legal actors assigned to individual cases.

ZEW RESEARCH DATA CENTRE

The ZEW Research Data Centre (ZEW-FDZ) provides external researchers with access to ZEW research data. The majority of the research data supplied by the ZEW-FDZ is micro-level data sourced from ZEW firm surveys. In addition, researchers can make use of data from ZEW expert and personal surveys. External researchers engaged in scientific research projects may apply for on-site data utilisation rights. In addition, the ZEW-FDZ provides external researchers with selected ZEW research data in the form of anonymised “scientific use files” that may be viewed and used off-site. Some datasets maintained as part of the Mannheim Innovation Panel (MIP) are also accessible in the form of “education use files”. These may be used for educational purposes in universities.

In 2016, 32 external researchers made use of the FDZ facilities and 44 external researchers analysed scientific use files. More than 60 per cent of user agreements pertained to data from the Mannheim Innovation Panel (MIP). Since 1996, more than 400 external researchers have taken the opportunity to use MIP data, about 40 per cent of whom worked outside of Germany, and twelve per cent outside Europe. To date, 30 lecturers have made use of the MIP education use files at academic institutions as part of their courses, and in 2016, three additional educators were added to this group.

OUTLOOK

The five existing research areas maintained by the Department will continue to structure research activities. At the same time, slight adjustments to the research programme will be made on an ongoing basis, in order to react to the changing economic and political conditions. Furthermore, the Department plans to widen the scope of its research in close cooperation with the new “Market Design” Research Group.

Research conducted in recent years on the internationalisation of innovation activities will be continued. Furthermore, changes in R&D policy at European level, and the resulting impact on

corporate innovation processes, will be investigated. In this connection, the Department intends to collaborate with the “Market Design” Research Group.

The intellectual property rights system will also constitute a major thematic focus in the future. Dedicated research projects will address the new EU Unitary Patent and Unified Patent Court. Moreover, the Department will devote increased resources to analysing the use of patents in competitive strategy. More intensive scrutiny of technology markets with the aim of developing recommendations for improved regulatory frameworks will be performed.

Work conducted in the research area of „Industry-Science Linkages“ will concentrate on knowledge generated with government financed research and the transfer of this knowledge to the private sector. In addition, the research area will examine the incentives for researchers and research institutions in the public sector, and investigate the reasons for scientific misconduct.

Economists in the research area of “Firm Foundations and the Growth of Start-ups” will continue to explore the reasons for the decline in start-up activity, which has been persistent in Germany for over 15 years. The importance of corporate growth rates and the heterogeneity of firms for productivity growth in Germany will also be investigated. Furthermore, researchers will examine the financing options available to young enterprises and analyse how the human capital of founders and employees impacts firm growth and innovation.

Economists in the research area of “Firm Closures” will continue their work in seeking to define different forms of market exit. In addition, they will aim to identify how insolvency law reforms have impacted firm survival and restart rates. An additional topic of study is how banks’ lending conditions for SMEs change when debtor rights are strengthened. Finally, the phenomenon of market exit as a result of takeover will be explored in greater depth.

» UNCOVERING GAPS IN BANK CAPITAL.



Dr. Oliver Lerbs

Acting Head of the Research Department
International Finance and Financial Management

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Uncovering
gaps

RESEARCH DEPARTMENT INTERNATIONAL FINANCE AND FINANCIAL MANAGEMENT



Dr. Oliver Lerbs
Acting Head of Department

RESEARCH AREAS

- **Bank Management and Financial Regulation**
Contact: Dr. Karolin Kirschenmann
- **Financial Intermediation and the Competitive Landscape**
Contact: Dr. Karolin Kirschenmann
- **Household Finance and Real Estate**
Contact: Dr. Oliver Lerbs

MISSION STATEMENT

The financial crisis brought the global financial system to the brink of collapse, devastating both businesses and households. We cannot allow this to happen again. The crisis underscored the paramount importance of ensuring financial stability, effective regulation, and sufficient capital flows to the real economy. The Research Department “International Finance and Financial Management” carries out empirical research to provide regulators and policymakers with the insights they need to improve the structure of the European financial sector and balance financial stability with economic growth.



RESEARCH AREA “BANK MANAGEMENT AND FINANCIAL REGULATION”

- Financial Regulation and the Architecture of the European Financial System
- Systemic Risk Measurement and Management
- Corporate Governance in the Banking Sector

This research area analyses the regulation of financial institutions in Europe and the role played by the European Central Bank (ECB) during the financial crisis. The empirical studies in this research area aim to assist policymakers in their efforts to create a sustainable financial architecture for Europe.

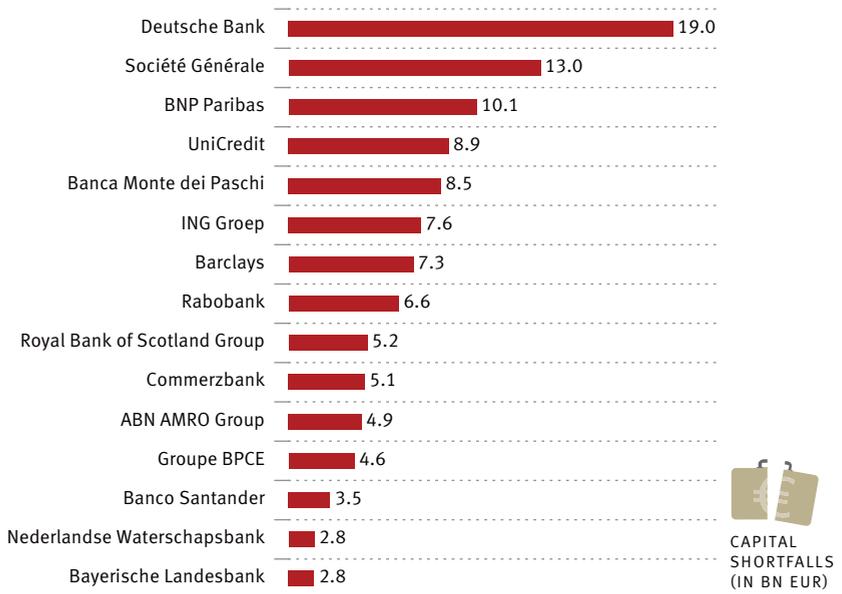
A number of research projects that are highly germane to this research area were initiated in 2016. Many of these projects involve collaborative activities with prominent international scholars, including academics at NYU and HEC Lausanne. Economists in this research area published several papers in highly respected journals in 2016, including the *Journal of Finance* and the *Review of Finance*. Last year also marked the completion of a European Commission-funded project titled FinMap (“Financial Distortions and Macroeconomic Performance”), which involved partners in Italy, Spain and the Czech Republic.

In a research project that garnered considerable attention, ZEW economists investigated the introduction of leverage ratios as a metric for assessing the capital reserves of European banks. In July 2016 the European Banking Authority (EBA) published a report on the losses suffered by European banks in its EU-wide stress test. The data furnished by the report were used by ZEW to assess the capitalisation of European banks. As part of the project, two different approaches to appraising bank capitalisation were compared: namely, the approach recommended by the EBA

in its 2014 Asset Quality Review (AQR), and the approach adopted in the US Federal Reserve’s 2016 Comprehensive Capital Analysis and Review (CCAR). These two approaches were then supplemented with a third, capital-market-based method. The study found that the selection of assessment methods has a decisive impact on the capitalisation rankings achieved by individual banks, as banks that fare poorly and are considered undercapitalised using one method perform much better using the other method, and vice versa. However, the CCAR approach and capital-market-based method arrive at similar results (see Figure 1). The study demonstrates that banking-sector stress tests are an error-prone endeavour.

In the research project titled “Too Big to Fail in the European Banking Sector”, ZEW economists are studying how government bailouts and regulatory reforms have influenced the expectations of market actors concerning whether certain banks are “too big to fail” and bound to be rescued. The initial results of this empirical study, which examines stock returns between 1996 and 2016, indicate that large European banks have been and remain the largest benefactors of government guarantees. Analysis of stock return data shows that investors price in systematic risk and, as a result, large banks with implicit or explicit guarantees benefit from considerably lower cost of capital. Furthermore, the results show that too-big-to-fail expectations have remained influential since the outbreak of the financial and sovereign debt crisis, yet have gradually declined in importance.

1] CAPITAL SHORTFALLS OF EUROPEAN BANKS ACCORDING TO THE CCAR 2016 METHOD



The table shows the capital shortfalls of European banks according to the CCAR 2016 methodology used in the US bank stress test. Only banks with capital shortfalls of more than €2billion are displayed.

In a research project dedicated to studying sovereign-bond maturity periods, economists in this research area are examining whether the unconventional monetary policy of the ECB has influenced the bond maturity date decisions of eurozone states. In particular, the study is focusing on ECB backstopping of its long-term refinancing operations (LTROs), through which the ECB has loaned more than one trillion euros. The study seeks to determine the extent to which this policy intervention has had unintended impacts on the financing structures of European states and whether certain reciprocal dynamics have taken root as a result of this policy intervention in the relationship between core and peripheral members of the eurozone. The insights generated by this study should be of relevance to various policy endeavours, including how to design an insolvency mechanism for eurozone states and how to implement central-bank liquidity interventions.

RESEARCH AREA “FINANCIAL INTERMEDIATION AND THE COMPETITIVE LANDSCAPE”

- Bank Capital, Bank Lending and the Real Economy
- Bank Lending and Loan Contracting

This research area focuses on the effects of bank regulation and changes in the European financial architecture on the real sector. As the European financial system is heavily dependent on its banking system, regulation and ECB interventions have a direct and substantial impact on the financing options and investments of non-financial firms. The central questions in this area include how long-term and sustainable funding sources for firms in Europe can be secured, even over the business cycle; and how the funding sources available to firms will change over the coming years. In order to answer such questions, our understanding of (the relevant parameters of) credit provided by banks must be advanced.

Over the course of 2016 economists in this research area worked on several highly germane projects. Research was undertaken in cooperation with scholars at prominent European institutions, including the University of St. Gallen and the European Bank for Reconstruction and Development (EBRD). Furthermore, papers were successfully published in highly respected journals, including the *Review of Finance* and the *Journal of Financial Intermediation*.

Current research projects are improving our understanding of how and under what conditions banks grant financing. In a project titled “The Local Impact of Global Banks’ Financing Models”, ZEW researchers are exploring how the internal capital markets used by large global banks affect the local supply of credit in various countries and whether this supply of credit varies over the business cycle. The financial and economic crisis showed that the complex interrelationships between banks are a major driver of the transmission of economic shocks between countries. Access to the internal information held by banks about their activities is essential for understanding (1) how shocks can be transmitted within global banking networks, and (2) the impact exerted by the design of internal capital markets. This research project draws on data from a survey of CEOs at Eastern European banks that are participants in global banking networks. Analysing

these data, the study's authors were able to classify banks' internal capital markets according to various criteria. For example, does the parent bank directly set growth targets for its subsidiaries? Does the parent bank provide financing to its subsidiaries? How competitive are the terms of such financing? Is the parent bank actively involved in the subsidiary's risk management? The initial findings generated by the study show that the design features of internal capital markets do have an impact on the local supply of credit, but only during economic downturns. Subsidiaries that have explicit growth targets and receive inexpensive financing from their parent bank extend a larger volume of loans than subsidiaries without such characteristics. However, when parent banks are actively involved in the risk management of their subsidiaries, the volume of loans extended declines during economic downturns. The results of this study will help to improve our understanding of how the financing and business models of banks influence credit extension across the business cycle.

In a research project titled "Numeracy and the Quality of on-the-Job Decisions: Evidence from Loan Officers", economists examined whether loan officers with better numerical abilities are able to make a more accurate assessment of customer default risk when granting a loan. The results of the study confirmed this hypothesis. An examination of the data across the business cycle shows the numerical abilities of loan officers were particularly important prior to the financial crisis. This suggests that information asymmetries between banks and customers are the largest when the economy is in expansion. Specifically, it appears that loan officers have more difficulty in interpreting information about creditworthiness that is available to them when the economy is robust. This indicates that one cannot point to changes in hurdles to information to explain why the supply of credit is pro-cyclical.

In the project "Credit Rationing in Small Firm-Bank Relationships", economists investigated the contractual terms by which loans are extended to companies. By examining loan applications and contracts signed with small companies in Bulgaria, the study sought to determine how the "rationing of credit" – that is, the loan amount granted to companies in relation to the amount originally sought – develops over the course of a customer–bank relationship. The study indicates that banks ration credit to a greater extent when they have a difficult time assessing the default risk of a new customer. Credit rationing is less severe when companies are more transparent for a bank. Furthermore, credit rationing declines for both types of companies over time. In this way, the reduction of informational asymmetries between banks and their customers can help to satisfy the credit needs of small companies.

RESEARCH AREA “HOUSEHOLD FINANCE AND REAL ESTATE”

- Lending to Households and Private Sector Debt Overhang
- Financial Advice and Household Decision Making
- Real Estate and Housing Markets in Europe

The overarching concern of this research area is how households use financial instruments to attain their objectives. Various topics are addressed in this area, including issues relating to the participation of households in key lending and asset markets, processes involved in financial decision making by households, the exposure of households to financial risk, and financial innovation that promotes economic welfare. The research area places a particular focus on residential real estate and its financing.

Economists in this research area initiated three long-term projects over the course of 2016. These projects involve cooperative activities with renowned institutions such as the Karlsruhe Institute of Technology (KIT) and the universities of Mannheim, Munich and Münster. In 2016 a number of papers were published in prominent professional journals, including *Regional Science and Urban Economics*. One of these papers, which addressed German rent control law, highlighted the importance of ZEW’s research for economic policymakers.

Within the scope of a SEEK project titled “Digital Marketplaces and Platforms”, economists in this research area are studying how digital platforms can support the long-term investment decisions of private investors. This project is being carried out in cooperation with the ZEW Research Department “Digital Economy” and the ZEW Research Group “Competition and Regulation”. The study is focusing on platforms that make use of “cognitive benefits” and which can compensate for the cognitive limitations of human decision-making processes. A new research partnership with KIT and the University of Mannheim is expanding upon and enriching ZEW’s work on this topic.

In a project being carried out with an international bank titled “How Do Savers and Banks React to the Low-Interest Rate Environment?”, ZEW is studying the challenges and opportunities for households and the retail banking sector that are resulting from ongoing low interest rates. As traditional savings accounts are generating almost no returns in the current environment, this might be encouraging households to place their savings in investment vehicles with higher rates of return. The first part of this study involves field research to gather panel data. A first survey wave took place in autumn 2016 and garnered responses from nearly 3,600 bank customers. The survey data indicate that low interest rates on savings accounts have reduced the tendency for households to save. This is particularly true of low-income households (see Fig. 2 on the next page). Furthermore, securities and real estate have become more attractive in relation to traditional savings vehicles, such as fixed-interest CDs. There will be a second survey wave in 2017.

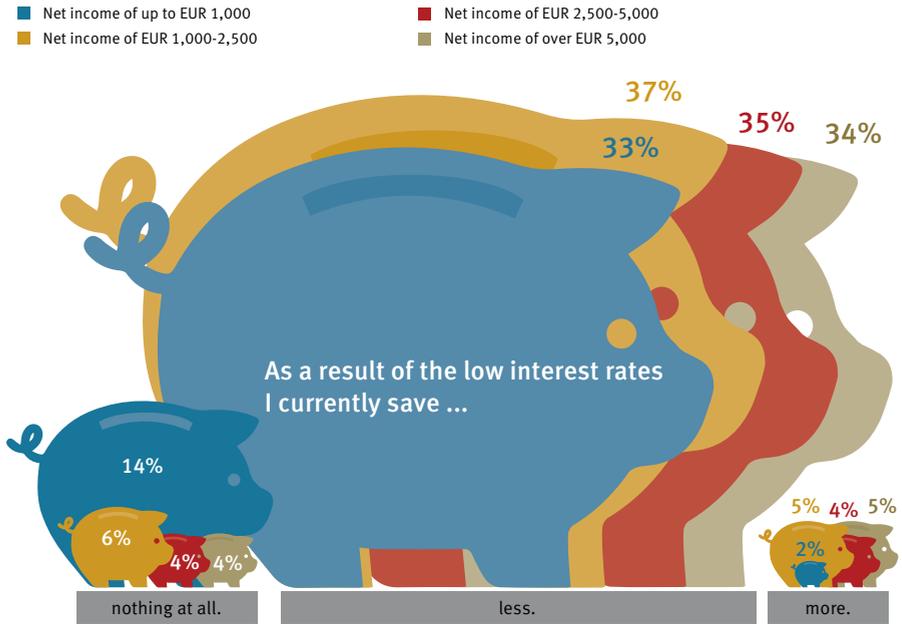
Economists in this research area are responsible for coordinating the Real Estate and Capital Markets Network (ReCapNet), an internationally renowned platform for real estate research. In

2016, some 20 scholars participated in the eighth annual ReCapNet conference at ZEW, which was devoted to the topic “Behavioural Real Estate”. The conference was supported financially by Stiftung Geld und Wahrung (“Money and Currency Foundation”). Within the scope of the Leibniz Project “Homes under Pressure”, the research area organised an interdisciplinary conference that was attended by approximately 40 researchers.

OUTLOOK

Over the coming two years, the SEEK projects “European Network on Better Institutions” and “Digital Marketplaces and Platforms” will play an important role for the activities of the Research Department. These projects will involve close collaboration between various research units at ZEW. In addition, the Research Department will study the optimal design of bailout mechanisms for banks during times of crisis, efficient tools for allocating capital in the financial system (e.g.

2] CONSEQUENCES OF LOW INTEREST RATES FOR HOUSEHOLDS' SAVINGS



In autumn 2016, ZEW conducted a nation-wide survey among nearly 3,600 bank customers, who were asked about their savings behaviour in the current low interest rate environment. The Figure shows the share of responses according to the households' net income.

Source: ZEW



In November 2016, the eighth interdisciplinary conference of the Leibniz Network on Real Estate Markets and Capital Markets (ReCapNet) took place at ZEW in Mannheim. The participants discussed issues related to behavioural real estate.

IPOs, bookbuilding, auctions), and the matching of banks and firms in credit and deposit markets. In exploring these topics, the Research Department intends to collaborate with the new “Market Design” Research Group. The “Homes under Pressure” project, which is financed by the Leibniz Association, will be complete at the end of 2017. In this project the Research Department is examining long-term scenarios in which residential real estate could become an important investment vehicle for German households.

In 2017 the Research Department will stage the second “Regulating Financial Markets” conference together with the German Bundesbank and the University of Frankfurt. The ninth international ReCapNet conference is also scheduled to take place at ZEW in 2017.

» MEETING OUR CLIMATE GOALS EFFICIENTLY.



Prof. Achim Wambach, PhD

Acting Head of the Research Department
Environmental and Resource Economics,
Environmental Management





clean energy

RESEARCH DEPARTMENT ENVIRONMENTAL AND RESOURCE ECONOMICS, ENVIRONMENTAL MANAGEMENT



Prof. Achim Wambach, PhD
Acting Head of Department



Dr. Martin Kesternich
Deputy Head



Dr. Sebastian Voigt
Deputy Head

RESEARCH AREAS

- **International Environmental and Resource Policies**
Contact: Dr. Martin Kesternich
- **Energy Economics**
Contact: Dr. Nikolas Wölfing
- **Transport and Mobility**
Contact: Katherine von Graevenitz, PhD
- **Innovation and Sustainable Development**
Contact: Prof. Achim Wambach, PhD
- **Macroeconomic Analysis of Environmentally Relevant Policies**
Contact: Dr. Sebastian Voigt

MISSION STATEMENT

The “Environmental and Resource Economics, Environmental Management” Research Department investigates the optimal function of markets and institutions with regard to environmental issues and resource scarcity. A key focus is placed on European energy and climate policy. Economists in the Research Department conduct economic assessments of policies that impact the environment, such as transportation, energy, technology, and economic policies. They also identify conflicts between economic and environmental goals. Given the universal shortage of resources, cost efficiency – that is, the ability of a policy to achieve a defined goal at minimal cost – as well as the equitable distribution of costs in society are key criteria in the assessments conducted by the Research Department.



RESEARCH AREA: INTERNATIONAL ENVIRONMENTAL AND RESOURCE POLICIES

- Interaction Between National and International Climate and Energy Policy Instruments
- Emissions Market Analysis
- Climate Change Awareness

Economists in the research area “International Environmental and Resource Policies” focus chiefly on the economic challenges of regulating global environmental problems and on questions related to international cooperation. Particular emphasis is placed on research questions geared to teasing out the workings of international climate policies as well as to analysing measures for adapting to climate change. Researchers also probe the impact of unilateral regulatory measures in a globalised economy and the opportunities and limitations of fragmented climate protection initiatives.

A major challenge in the design of international emissions trading schemes (ETS) is to integrate key players from emerging and developing countries in existing systems. The results of a model simulation of a hypothetical combination of relevant regulations in the EU and China, as well as in the United States and China, show that this sort of integration can lead to welfare benefits for all involved parties given certain conditions.

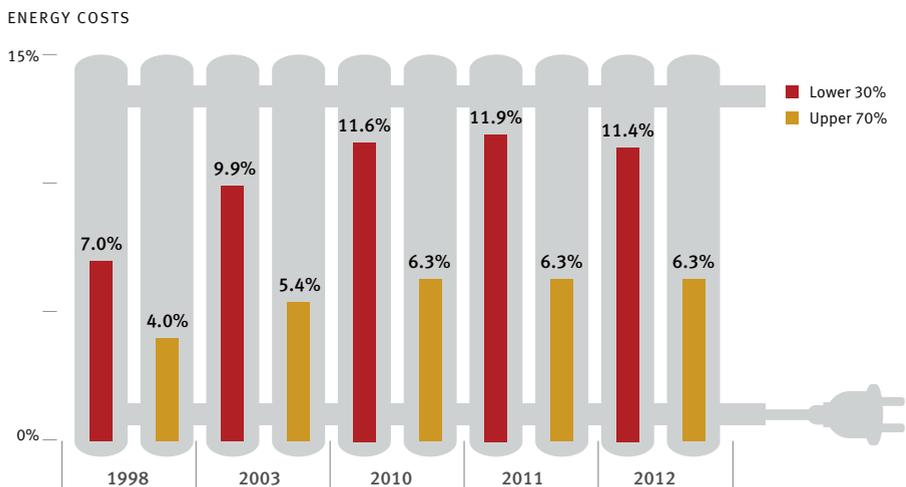
Whether existing emissions trading schemes can be expanded from a practical perspective under current international climate policy remains doubtful. Participants in the EU ETS in Germany were surveyed on their predictions regarding the Paris climate agreement for the KfW/ZEW CO2 Barometer. The majority of respondents expected no significant impetus for greenhouse gas reduction as a result of the agreement.

The EU ETS currently offers only moderate incentives for greenhouse gas reductions. Various proposals have been put forward for strengthening the Emissions Trading Scheme as the central plank of European climate policy, including measures to increase administrative efficiency. Meanwhile, the most up-to-date empirical studies of company-level administrative records find that, contrary to widespread fears, the EU ETS has so far not had any negative impact on competition for the companies regulated.

Some tangible effects of climate and energy policy can be seen on households, such as rises in electricity prices. Empirical studies show that poorer households often already consume electricity very sparingly. As a result, it would be difficult to cut back any further. Therefore, there is an unintentional distributional effect in which price increases are more keenly felt by poorer households than their wealthier counterparts (see Figure 1). Regarding the intersection of energy and social policy, it is clear that basic social security provision is insufficient to cover the cost caused by using electricity to generate hot water. Energy efficiency in private households is therefore an important option for reducing electricity and heat consumption. Further studies on the cut-off of power utility service to households suggest that low incomes are not the sole problem. Rather, a multitude of problems are responsible.

Individual willingness to contribute to the public good is critical for the success of national and international climate protection efforts. ZEW researchers continued work on the demand for CO2 balancing mechanisms. A study into the effect of financial incentives based on field expe-

1] PRIVATE HOUSEHOLD EXPENDITURE ON ELECTRICITY AND HEATING IN GERMANY AS A PERCENTAGE OF AVAILABLE NON-EQUIVALISED HOUSEHOLD INCOME



Source: GSOEP29

periments was successfully published in the renowned Journal of Public Economics. In addition, the influence of non-monetary incentives were investigated from a behavioural economics perspective. Experiments with citizens from Mannheim and Heidelberg investigating the voluntary provision of spatially overlapping public goods show a preference for local approaches. However, such preferences can be overridden by efficiency considerations.

To gain a better understanding of the role of individual behaviour in international social dilemmas, additional attention was devoted to expanding the range of international participants involved in experiments. A survey of Indonesian fishermen revealed the weak impact marine reserves have in protecting tropical coral reefs from local and global stress factors.

Ongoing studies of adaptation behaviour show that German householders are strongly opposed to index-based flood insurance schemes in which payouts are linked to weather parameters. It has also been shown that adopting independent flood prevention measures is strongly influenced by individuals' real experiences of flood damage and losses. In addition, it is clear that falling victim to storm damage can change individuals' risk preferences.

RESEARCH AREA: ENERGY ECONOMICS

- Sectoral Analyses of Energy Markets
- Energy Demand Behaviour and Market Observation
- Competition, Market Design, Interaction with Environmental Policy

Economists working in the research area of “Energy Economics” analyse the effectiveness and efficiency of German, European and global markets for energy and raw materials. A particular focus is placed on exploring the drivers of energy demand and investment decisions, as well as on analysing the organisation of wholesale electricity markets.

In 2016 some projects were successfully completed and some exciting new projects were launched. The Helmholtz Alliance ENERGY-TRANS project, which studied industrial energy demand, was completed in 2016. One of the project's chief aims was to analyse the effects of different energy policy instruments on the manufacturing sector. The study was able to show that current electricity tax exemptions have no significant effect on company performance and the EU ETS has no significant negative impact on the productivity of regulated companies. Several new research projects were also launched in 2016, such as the Kopernikus project “System Integration: ENavi”. The studies being carried out under the aegis of this project are building on the findings from the Helmholtz Alliance and from a previous project that researched the driving forces behind investment in renewable heating technologies. Funding has also been awarded to a project examining the impact of the EU ETS on the efficiency of fossil fuel power stations. Proposals for a range of other new projects are also in the pipeline, including a joint project with a partner able to provide researchers access to load profiles from industrial and commercial customers.

Two projects researching household energy demand were successfully brought to a close in 2016. The “SoKo Energiewende” (“Socio-Political Impact of the German Energy Transition”) pro-

ject laid the foundations for an empirical estimate of domestic demand. At the MaTax Science-Campus, these findings were built on to produce a flexible system of demand and measures of individual household welfare. In the ongoing project “InTrans”, a micro-simulation model was successfully paired with a computable general equilibrium model, which enables researchers to carry out an integrated distribution and welfare analysis of energy policy measures. Publications of these findings are currently in the pipeline. A methodological contribution to the test of independence in functional panel data was published in the *Journal of Multivariate Analysis*.

The research area’s public presence was widened through a range of events and appearances, including participation in a panel discussion with the Vice-President of the European Commission on Energy Union. Other events include the Mannheim Energy Conference, organised jointly with the “Competition and Regulation” Research Group at ZEW, and a Parliamentary Evening organised in conjunction with the Rhine-Neckar metropolitan region. The main subject of the Eberbach Abbey talks, hosted in collaboration with the Hessian Ministry of Economics, Energy, Transport and Regional Development and the University of Münster, was the role of private households in the clean energy transition.



Panel discussion on the state of the Energy Union at EurActiv in Berlin. From left: Karsten Brüggemann, Head of Region Central Europe Nordex SE, Dr. Joachim Pfeiffer MdB (CDU), Ama Lorenz, Chief Editor at EurActiv.de, Maroš Šefčovič, Vice-President of the European Commission, Dr. Julia Verlinden MdB (Green Party), Dr. Nikolas Wölfing, ZEW.

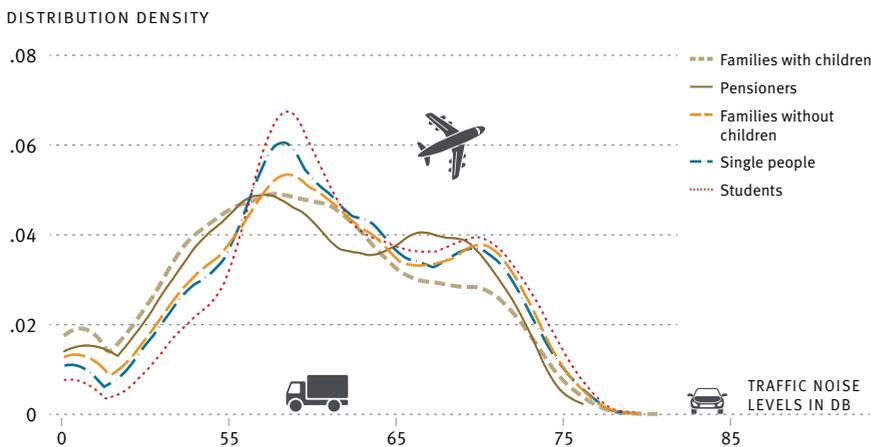
RESEARCH AREA: TRANSPORT AND MOBILITY

- Ecological and Socio-Economic Effects of Transport Systems
- Concepts for Sustainable Development in the Transport Sector
- Freight Transport Volumes and Transport Modes

Economists in this research area evaluate options for environmental and transport policy that promise to meet growing mobility needs in a cost-effective and environmentally friendly way. Additional subjects of study include consumer behaviour and consumer responses to regulatory interventions and their socio-economic impact on other economic sectors.

The findings of the project researching the possible inclusion of emissions from road transport in the EU ETS have been published in the peer-reviewed scientific journal *Transportation*. In addition, a further discussion paper on the socio-economic impacts of road traffic has been released. The paper features an analysis of the willingness to pay for reductions in traffic noise. The study is based on Danish micro data and shows that families with children in particular are highly willing to pay for reductions in traffic noise. The heterogeneity in the willingness to pay is substantial and is reflected in the actual noise pollution faced by different types of households (see Figure 2 below). Nevertheless, the results indicate that the use of many technological measures to reduce noise could be justified based on a cost/benefit analysis.

2] DISTRIBUTION OF DIFFERENT TYPES OF HOUSEHOLD ACCORDING TO TRAFFIC NOISE IN COPENHAGEN, DENMARK



The graph shows that families with children are most likely to settle down in quieter areas, whereas students tend to be exposed to higher levels of noise where they live. Source: ZEW

The research area is currently focusing its efforts on a recently launched research project into climate-friendly courier services, which is being funded by the Federal Ministry for Education and Research. Part of the German-Polish line of funding, the project aims to contribute to the reduction of environment externalities caused by the growing demand for courier services. The project includes a field test to stimulate demand for CO₂ compensatory mechanisms for the use of courier services. The project was officially launched at a joint kick-off event hosted by the Federal Ministry for Education and Research and the Polish funding institution in Poznań in October.

RESEARCH AREA: INNOVATION AND SUSTAINABLE DEVELOPMENT

- Determinants and Economic Impact of Environmentally Oriented Innovation
- Integrating Technological Change in Macroeconomic Models
- Innovation Strategies for a Green Economy

The research area “Innovation and Sustainable Development” focuses on conflicts arising between the goals of environmental and economic performance. Analysis of the determinants and economic effects of environmental innovations forms a key component of the work pursued in this research area. Researchers also examine the prerequisites for the promotion of socially and environmentally sustainable manufacturing processes, products and services. These include both supply-side and demand-side incentives.

One of the main priorities for the research area in 2016 was continuing work on empirical studies into the diffusion of environmental innovations and their effect on company performance. Ongoing research aims in particular to introduce innovative pollution control technologies together with changes in the internal corporate organisational structure. It has become clear that the use of energy and resource efficient environmental technologies alone is often not cost-efficient due to high investment costs and the comparatively small additional income for the company, and can even lead to a decline in productivity. However, this is not the case if product innovation goes hand in hand with process innovation, in the sense of a change in the internal corporate innovation structure.

Other studies focused on the importance of information and communication technologies (ICT) on energy demand. Using a panel data set from ten OECD countries covering 27 branches of industry, researchers were able to conclude that the implementation of ICT can contribute to a reduction in energy demand. Researchers emphasised, however, that there are different effects for individual forms of energy. Whilst ICT negatively affects demand for non-electrical energy (such as gas), it has no significant effect on the demand for electricity.

It was also shown that sequential policy strategies, which initially focus on decarbonising electricity generation and only after that aim to promote the diffusion of electric vehicles and electric heat generation, can contribute to larger increases in productivity compared with the simultaneous introduction of both policies. This can be largely attributed to the fact that innovations in decarbonisation in the field of electricity generation influence a larger market than, for example, the mobility sector.

In a memorial workshop held in honour of Klaus Rennings (d. 16.09.2015), who played a significant role in managing and directing the research area's work for many years, former colleagues gathered to discuss recent developments and studies in the field of eco-innovation.

RESEARCH AREA: MACROECONOMIC ANALYSIS OF ENVIRONMENTALLY RELEVANT POLICIES

- Design and Development of National and International Environmental and Economic Policy Instruments
- Macroeconomic and Sector-Specific Effects of National and International Environmental Policies – Analysis of Efficiency and Distribution, Effects on Competition
- Environmental Effects of Economic Policy Measures

The research area “Macro-Economic Analysis of Environmentally Relevant Policies” explores the macroeconomic and sectoral impact of environmental-economic policy instruments, placing particular emphasis on climate and energy policy and on advances in technology. The research area develops and applies computable general equilibrium (CGE) models and partial models that facilitate the quantitative estimation of the impacts of economic policy interventions on consumers and producers. The economists' quantitative analyses are based on economic theory as



Memorial workshop held in honour of Klaus Rennings († 16.09.2015)

well as econometric estimations that are conducted for the purpose of model calibration. This research area is distinguished by its cross-departmental role, for it brings its methodological expertise to bear on issues under investigation in the Department's other research areas.

The research area continues to play an important role in advising the European Commission on the development of European climate policy. After analysing options for the EU's climate and energy policy in 2030 and 2050, as well as their impact on economic indicators, in previous projects for the European Commission, the research area's economists carried out a more detailed mapping of the energy sector this year. This was achieved by including more energy sources as well as CO₂ capture and storage (CCS) in the computable general equilibrium model PACE. This allowed researchers to more accurately model and investigate the macroeconomic and sectoral effects of climate and energy policies. The structure of the EU ETS after 2020 and the impact of the Paris agreement are key areas for study. The research area will continue to work on these studies over the coming years.

In 2016 researchers continued to work as part of the "Modeling the Bioeconomy" competence network, which falls under Baden-Württemberg's Bioeconomy Research Programme. A fundamental innovation in this field is the integration of material use of biomass in the PACE model. This will allow researchers to interface formation models at lower aggregation levels, such as an agricultural sector model. This work will be completed next year.

The research area was also able to launch two new projects in 2016. The research area is focusing on the development and macroeconomic simulation of energy scenarios as part of the "Research Network for the Development of New Methods in Energy System Modelling". This project contributes towards the 6th Research Programme of the Federal Ministry for Economic Affairs and Energy. Researchers will also investigate the economic impact of different clean energy transition strategies in the Kopernikus project "System Integration: ENavi".

OUTLOOK

The Research Department is still going through a phase of comprehensive reorganisation. The rapid growth seen in recent years has eased up in 2016. However, the Department has increased the breadth of its research activities. The move by the former head of the Research Department, Professor Andreas Löschel, to the University of Münster has offered an opportunity to reorganise the structure of the Department to reflect these changes. Adjustments to the research programme are being made as part of this ongoing reorganisation. These are slated to be complete in 2017. The research areas "Energy Economics" and "Transport and Mobility" are to be brought together to form the research area "Energy and Mobility". All other research areas will remain in their current forms for the time being.

Expanding current research into the design of markets and institutions will be a key focus over the coming years. The Department plans to work closely with the newly established Research Group "Market Design" to further this aim. Collaboration will take place in various areas. In 2016 projects were launched using up-to-date theory to design an emission rights market and inter-

national institutions to strengthen global climate protection. Work will continue on these projects over the coming years.

The Research Department is increasingly expanding its collaborative and consulting activities to global contexts in order to take global environmental policy into account, working closely with researchers in the US, China and Australia.

» SUSTAINABLE TAXATION OF INTERNATIONAL FIRMS.



Prof. Dr. Friedrich Heinemann
Head of the Research Department
Corporate Taxation and Public Finance



RESEARCH DEPARTMENT CORPORATE TAXATION AND PUBLIC FINANCE



Prof. Dr. Friedrich Heinemann
Head of Department



Prof. Dr. Katharina Nicolay
Deputy Head

RESEARCH AREAS

- **Corporate Taxation and Tax Location Analysis**
Contact: Rainer Bräutigam
- **Empirical Effects of Corporate Taxation**
Contact: Prof. Dr. Katharina Nicolay
- **Decision Making in Tax and Financial Policy**
Contact: Prof. Dr. Friedrich Heinemann
- **Fiscal Policy, Fiscal Federalism and Economic Performance**
Contact: Dr. Zareh Asatryan

MISSION STATEMENT

The “Corporate Taxation and Public Finance” Research Department addresses questions related to corporate taxation and empirical public economics within the broader context of economic integration. The overarching aim of research in this Department is to understand how high international mobility impacts sustainable tax and financial policies as well as the scope, structure and tasks of the public sector.

The Research Department is a leader in Europe for the international comparison of tax burdens thanks to its tax analysis models, including the European Tax Analyzer. Special attention is devoted to European integration processes through the analysis of EU tax harmonisation, the eurozone’s fiscal condition, the EU budget, the federal division of responsibilities and fiscal governance. The Department’s research agenda generates concrete tax and fiscal policy recommendations, thus supporting ZEW’s guiding aim of studying the optimal performance of markets and institutions in Europe.



NOTEWORTHY

The Department's researchers play an important role in the Leibniz ScienceCampus "Mannheim Taxation" (MaTax), which studies tax policy against the backdrop of European and global integration as well as social and economic challenges. Accordingly, there are many points of overlap with the Department's research agenda. The Annual MaTax Conference held in October 2016, which featured Dhammika Dharmapala (University of Chicago) as keynote speaker, was just one of the many activities conducted as part of the MaTax ScienceCampus.

RESEARCH AREA: CORPORATE TAXATION AND TAX LOCATION ANALYSIS

- International Comparison of Effective Tax Burdens
- Harmonisation of Corporate Taxation in Europe
- Tax Policy Reform Proposals

Researchers in this area are concerned first and foremost with analysing corporate taxation in Europe, including national and European reform and harmonisation proposals. In terms of methods, the maintenance and further development of a toolbox of models for comparing international tax burdens is a key activity.

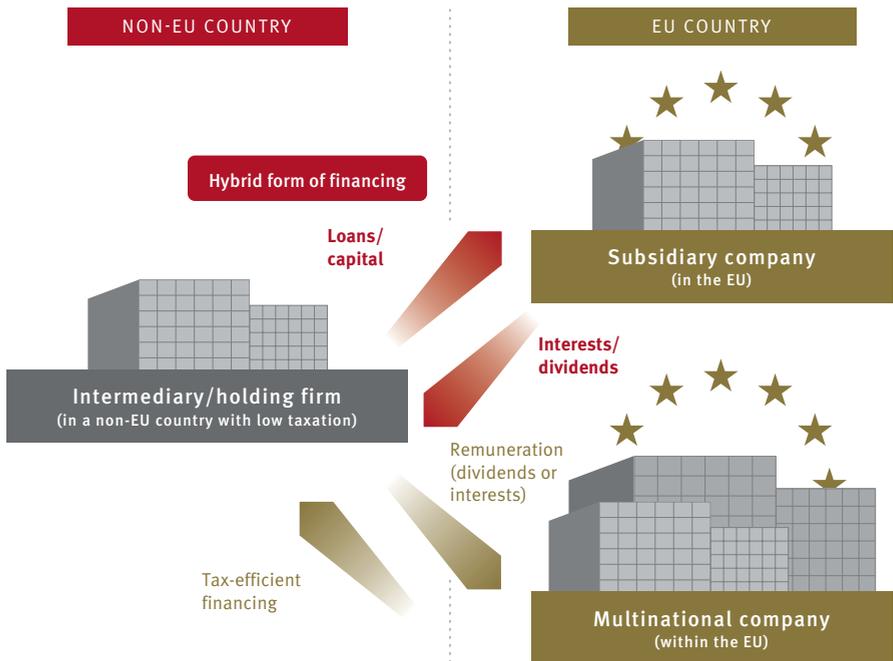
Economists in this research area rely on various modelling tools, including the European Tax Analyzer, the Devereux & Griffith model and ZEW TaxCoMM. During the year under review, economists in the area conducted three prominent studies on behalf of the European Commission on

reform proposals for European corporate taxation. The results of the ZEW studies were considered in the EU Commission’s latest proposal for creating a common consolidated corporate tax base (CCCB). In carrying out these studies, ZEW’s economists expanded the Devereux & Griffith model to reflect the current tax planning activities of multinational corporations (see Figure 1).

In addition to improving the function of the Devereux & Griffith model, researchers also expanded its regional scope. The BAK Taxation Index, developed jointly with BAK Basel Economics, analysed effective tax burdens in three additional countries (Brazil, India, Japan and Russia). The comparative tax burden index now comprises almost 90 locations around the world. In addition, economists conducted a separate analysis of how tax incentives for innovation influence effective tax burdens.

The European Tax Analyzer also underwent a methodological expansion. Previously, the model considered only absolute tax payments in its calculations. The inclusion of new relative measures of taxation is intended to make the results of the model more understandable, since the new relative measurements will also be directly comparable with national corporate tax rates.

1] TAX PLANNING STRUCTURES FOR THE CALCULATION OF EFFECTIVE TAX RATES



A multinational company finances its subsidiary (both in the EU) by using a holding firm in a low-tax country (outside the EU) with hybrid financing funds. Source: ZEW

The research area conducted a wide-ranging analysis of different proposals to reform the inheritance tax in Germany, and classified them in an international ranking of inheritance tax burdens. The economists' calculations show that the reforms would entail significant increases in the tax burden, especially for heirs of large business assets.

In addition, new research helped to clarify improper capital-gains tax refunds on dividend payments (cum/ex trade fraud). Professor Christoph Spengel played a major role in reforming the legal status of this area through his reports to the committee of inquiry of the German Bundestag involved in investigating cum/ex trade fraud.

RESEARCH AREA: EMPIRICAL EFFECTS OF CORPORATE TAXATION

- Taxation and the Decision Behaviour of Multinational Enterprises
- Tax and R&D Activity
- Microsimulation

In the research area “Empirical Effects of Corporate Taxation”, ZEW economists investigate the effects of taxation on the behaviour of taxpayers in general and of businesses specifically.

As part of a project funded by the German Research Foundation (DFG) on the tax effects of corporate takeovers, economists in this research area studied the connection between takeover-related changes in productivity and differences in effective tax rates between locations of the affected firms. They found that larger differences in tax rates were correlated with lower gains in productivity after the takeover. Another DFG-funded project investigated the extent to which the organisational structures of corporations are tax-sensitive. Researchers found that profit transfer through debt relocation was seen more frequently when the role of holding corporations was taken into account.

The profit shifting behaviour of multinational enterprises was another issue examined by ZEW researchers in the year under review. An empirical analysis clearly showed that a tightening of transfer pricing requirements can only reduce tax sensitivity if strict regulations are in effect for interest deductibility.

As part of a project commissioned by the Federal Ministry of Finance, a project team collected data on the use of digital provider websites in order to analyse the volume and structure of digital services. This study will form a foundation for developing major future research projects on the taxation of digital markets.

Several empirical studies have made use of administrative databases on small and medium-sized enterprises (SMEs). Data from Austria and Armenia were analysed to investigate the effects of income and corporate taxes. The research team also evaluated the effects of threshold values for specific documentation requirements. The study, based on data for Austria, shows that owners of SMEs sharply adjust their behaviour in response to rising marginal tax rates, especially at the end of the year. The study based on data for Armenia came to the conclusion that firms in developing nations respond more to documentation requirements than to tax incentives. A num-

ber of research projects analysed the impact of tax incentives on corporate innovation activity. They examined the influence of patent boxes as well as the effects of expense-related incentives. The projects are focused on the international effects of tax policy. The empirical and theoretical analyses show that tax incentives for research have major international effects.

The group's researchers conducted a meta-study to examine the causal significance of discrepancies between trading profits and taxable profits as documented in the literature. Overall, they found that such discrepancies are, in fact, an indicator of an active accounting policy.

RESEARCH AREA: DECISION MAKING IN TAX AND FINANCIAL POLICY

- Political Economy of Fiscal Policy
- Tax and Fiscal Policy Preferences of Voters and Politicians
- Determinants of Structural Reform Capability

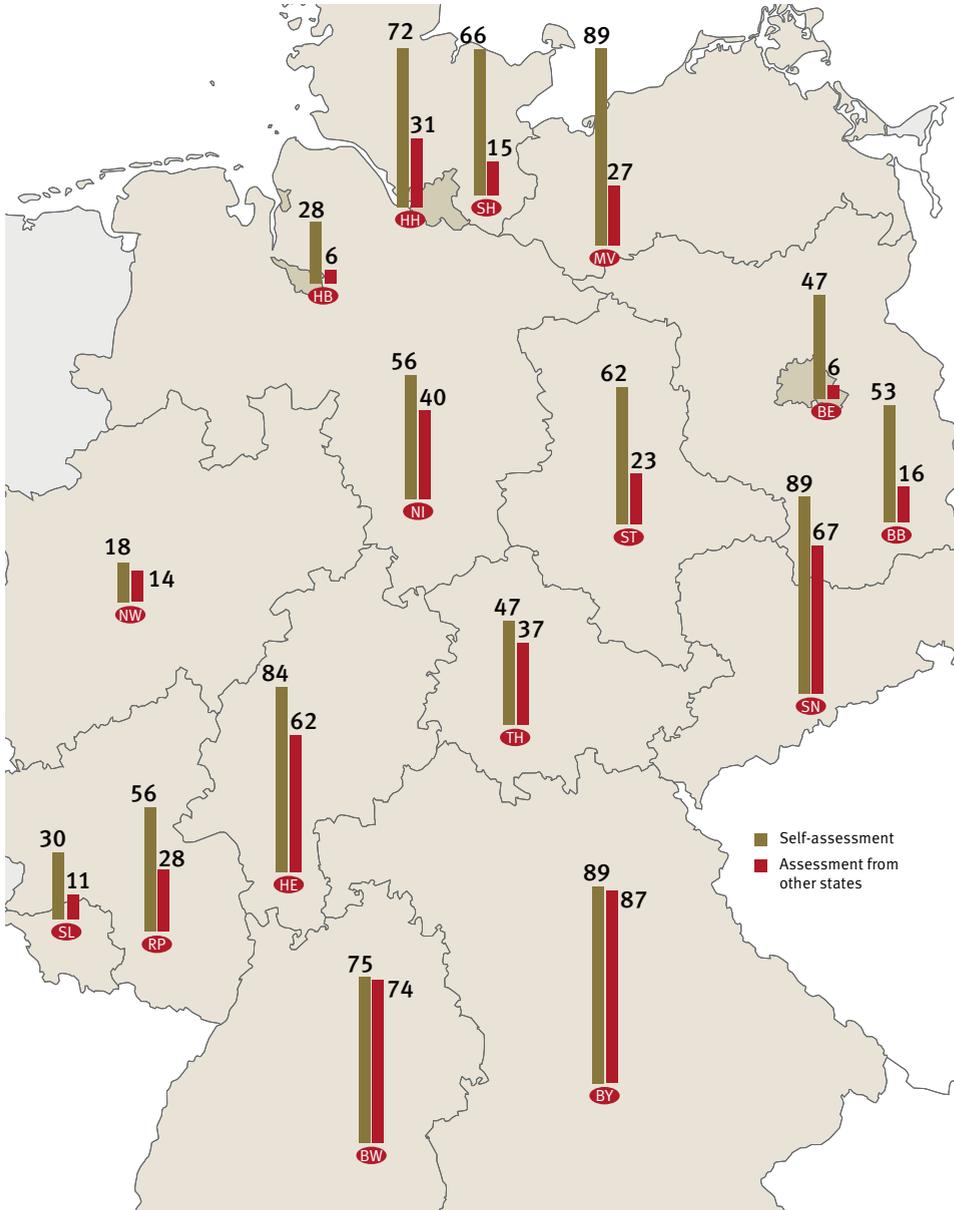
The research area “Decision Making in Tax and Financial Policy” undertakes economic policy analyses of fiscal decision-making. Researchers in this area conduct studies to examine the determinants of real fiscal policy, which often diverges considerably from the empirical findings and normative implications of research in public economics. Additionally, it investigates the ways in which voters and politicians form their fiscal preferences and make decisions in tax and fiscal policy. The analysed data are drawn from voluntary surveys of members of parliament and the citizenry.

A primary survey-based study by researchers in the research area published in the *Journal of Public Economics* shows systematic patterns in the credibility of fiscal rules, as perceived by parliamentarians. For example, parliamentary representatives’ expectations for state compliance with the German constitutional debt brake starting in 2020 was more optimistic for their own state than was the expectation of representatives from other states (see Figure 2). The preferences of all German state parliamentarians was determined as part of a survey by the Mannheim Collaborative Research Centre (SFB) “Political Economy of Reforms”, which is currently in its second funding period (2014–2018) and forms the central element of the research area’s work on the preferences of political decision-makers.

As part of the SFB survey project, the team queried the preferences of delegates to the French *Assemblée Nationale* and Senate and members of the German *Bundestag* regarding the division of competencies in the EU and a common fiscal and financial policy in the eurozone. The results suggest that parliamentarians in both nations shared similar views regarding an expanded European competency in the realm of immigration and defence.

In order to examine the efficacy of fiscal rules, authors in the research area performed a meta-regression analysis. Their analysis investigated which characteristics of various primary studies influences the measured empirical effects of fiscal rules. Their findings suggest the relevance of a developed identification strategy as well as a publication distortion: articles published

2] ASSESSMENT FROM GERMAN STATE-LEVEL POLITICIANS OF THE LIKELIHOOD OF INDIVIDUAL GERMAN STATE'S ADHERING TO THE CONSTITUTIONAL DEBT BRAKE AFTER 2020



The variable self-assessment and assessment from other states measure the average approval rating in per cent from state-level politicians in terms of their own state and all other federal states (excluding their own), respectively.

Source: ZEW

in a refereed journal refer to statistically significant results relatively more frequently than unpublished working papers.

Continuing another line of research on the influence of direct democracy on fiscal decisions, a ZEW paper examined the contagion effects of public petitions at the community level. Communities are more likely to initiate a public petition if their neighbouring communities have previously conducted public petitions, especially in similar policy and/or topic areas.

RESEARCH AREA: FISCAL POLICY, FISCAL FEDERALISM AND ECONOMIC PERFORMANCE

- Fiscal Policy in International Competition
- EU Financial Constitution
- Regulatory Frameworks of the Eurozone

The research area “Fiscal Policy, Federalism and Economic Performance” is dedicated to analysing federal systems, fiscal governance, and the correlations between fiscal policy and economic performance. Determining which federal policies and supporting measures and institutions encourage economic performance is a key research concern. National policy arrangements (such as Germany’s financial equalisation scheme and the debt brake) are considered alongside European ones (including the division of responsibilities between the EU and Member States, fiscal contracts, etc.).

The research area has continued to address reform proposals for the future EU budget. A study commissioned by the Federal Ministry of Finance sought to develop strategies to better enhance the impact of financing European public goods in the EU budget. On behalf of the European Parliament, a ZEW team along with partners from Paris and Brussels showed ways that the EU budget could be better applied for supporting administrative reforms in the Member States.

In relation to eurozone regulatory frameworks, a team of authors examined the collective impacts of ZEW reform recommendations. They specifically included the recommendations for creating an unemployment insurance scheme for the European Economic and Monetary Union (EMU-UI) and an insolvency system for eurozone states (Viable Insolvency Procedure for Sovereigns, or VIPS). Their analyses suggested that these two innovations would represent complementary aspects of an overall strategy. The VIPS insolvency procedure limits the risk that the EMU-UI, contrary to its intended purpose as a stabilisation policy, mutates into a system with a transfer character. Conversely, the existence of an EMU-UI would partially protect Member States from asymmetrical shocks, which could otherwise precipitate liquidity crises.

A newly initiated SEEK project has begun to investigate the influence of Fiscal Councils. These new institutions are designed to bring greater neutrality to fiscal governance, and were introduced in response to the obligations from the Fiscal Pact in many European nations. In November, the research area set up an international workshop with scientists working in this research field along with representatives from national fiscal councils.

An ongoing policy advising project for the Bertelsmann Foundation is focussed on how to best allocate public-sector responsibilities between the European Union and Member States. In connection with this line of research, economists in the research area have also completed a study that concluded with a recommendation to establish a Europe-financed “European Asylum Agency”, with responsibility for managing asylum procedures in all Member States.

OUTLOOK

In the coming year, the department will refine its tools for comparing tax burdens. Specifically, the next step will be to further adapt the Devereux & Griffith model to meet current developments. The planned extensions are intended to enhance our understanding to new forms of tax optimisation behaviour. This knowledge will serve for designing better taxation systems for the future and will contribute to the ongoing discussion about how to contain aggressive tax avoidance strategies. The research area will remain intensively involved in this area.

Given the growing importance of digital marketplaces and business models, upcoming research projects will study how these trends affect the government’s ability to tax income or value added from internet-based transactions, including the analysis of tax-related attractiveness of digital business models and ways of taxing international digital services.

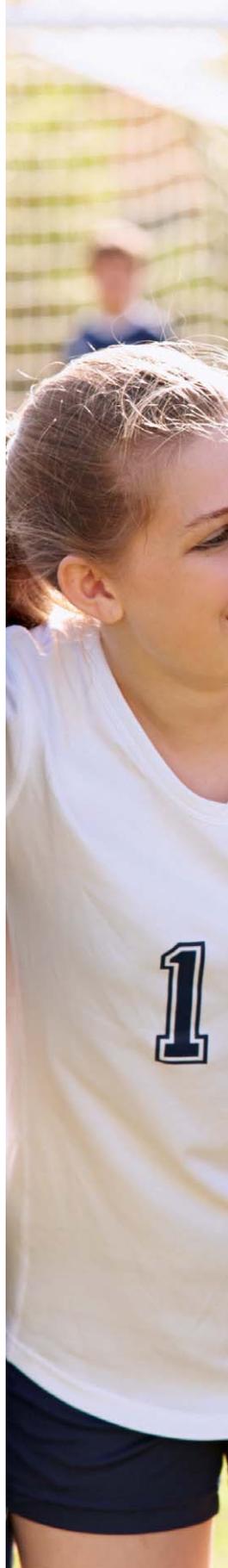
In relation to eurozone regulatory frameworks, the research area plans to examine the impact of independent Fiscal Councils. Special attention at the European level will be given to the newly established “European Fiscal Board”.

The creation in 2016 of the new ZEW Research Group “Market Design” creates major future opportunities for further developing the Department’s agenda in relation to detailed issues of market design. Projects are currently under development at the interfaces between taxation, public economics and market design. In the public economics sector, this includes consideration of new markets for public procurement.

» FORGING A MORE COHESIVE SOCIETY.



Dr. Holger Stichnoth
Acting Head of the Research Group
International Distribution and Redistribution





social
conesion

RESEARCH GROUP INTERNATIONAL DISTRIBUTION AND REDISTRIBUTION



Dr. Holger Stichnoth
Acting Head of Group



Dr. Philipp Dörrenberg
Deputy Head

RESEARCH AREAS

- **Income and Wealth Distribution**
Contact: Dr. Philipp Dörrenberg
- **Tax and Transfer Policy**
Contact: Dr. Holger Stichnoth, Dr. Philipp Dörrenberg
- **Fiscal Policy and Distribution in Europe**
Contact: Dr. Holger Stichnoth

MISSION STATEMENT

The Research Group “International Distribution and Redistribution” investigates trends in income and wealth distribution as well as other indicators of inclusion and equal opportunity. A major research focus is on redistribution through tax and transfer systems and associated economic effects. Adopting national, European and international perspectives, the Research Group conducts empirical analyses of developments in these areas. The Research Group’s empirical studies aim to support the implementation of a sustainable tax and transfer system and stable European institutions.

Using a variety of econometric techniques, the Research Group conducts microdata analyses to explore trends in wealth and income distribution and to identify causal effects. The Research Group studies both existing tax and transfer systems and the potential economic effects of reform proposals. Work in this area takes into account the distributional and efficiency aspects of tax and transfer systems, as well as their incentive and insurance effects over the life cycle.



RESEARCH AREA: INCOME AND WEALTH DISTRIBUTION

- International Income and Wealth Distribution
- Equal Opportunity
- Regional Inequality

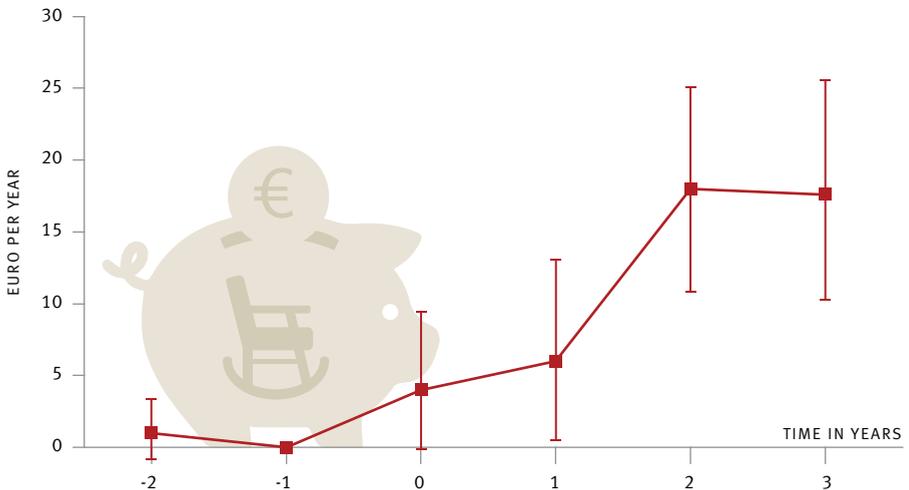
The research area “Income and Wealth Distribution” investigates trends in income and wealth distribution in international contexts by analysing various indicators. Particular attention is devoted to the analysis of equal opportunity and regional differences in inequality. In addition, researchers analyse potential drivers of mounting inequality, such as globalisation and demographic change, and especially the role of tax and transfer systems. Individual preferences regarding redistribution and attitudes toward “fair” tax systems are additional areas of research. Based on these studies, researchers provide policy advice for reforms of the tax and transfer system to improve equality of opportunity. The research area’s empirical work on income, wealth and equality of opportunity is predominantly based on high-quality administrative data and internationally comparable microdata taken from various sources, including statistics on income and living conditions contained in the “EU Statistics on Income and Living Conditions” (EU-SILC).

In 2016, the research area conducted several studies on behalf of the Bertelsmann Foundation aimed at developing a scientifically based overview of poverty, wealth and inequality in Germany. An additional focus was in the area of equal opportunity – the economics literature has distinguished between “fair” and “unfair” components of existing distribution patterns. By analysing survey data, the studies also consider the popular perception of inequality, which sometimes differs from statistical measurements.

As part of a SEEK project, economists working in this research area investigated the share of overall wage inequality in Germany attributable to inequalities between different German administrative districts and the share stemming from inequalities within administrative districts. In addition, they analysed whether regional income differences are smaller if one considers “real income”, including regional differences in price levels as opposed to only differences in nominal income. For these comparisons, researchers used social security data supplemented by information on living costs (e.g. housing costs) at the regional level. The results show that income differences between Eastern and Western Germany are smaller if one takes into account regional price differences.

Researchers in this area also studied whether the annual information letter that is sent by the German government concerning future pension benefits influences private pension contributions. Using data from the German Taxpayer Panel, which is based on annual income tax statistics, researchers showed that receiving the letter encourages increased private pension savings in the form of voluntary contributions to “Riester pension” funds. Figure 1 shows the effects on Riester payments before and after first receipt of the information letter: in the following two years, payments increase by approximately 17 euros.

1] THE INFLUENCE OF ANNUAL INFORMATION LETTERS ON PRIVATE PENSION CONTRIBUTIONS



Source: Calculations based on the German Taxpayer Panel of the Federal Statistical Office for the period 2001–2010. The analysis only includes taxpayers of the age group 23 to 30.

RESEARCH AREA: TAX AND TRANSFER POLICY

- Tax Incidence and Tax Effects
- Analysis of Reforms and Reform Proposals
- Optimal Tax and Transfer Policy Design
- Incentive Effects of Tax and Transfer Systems over the Life Cycle

Economists in the research area of “Tax and Transfer Policy” employ various methods to study the efficiency, distribution and welfare effects of tax and transfer systems from national, European and international perspectives. Researchers in this area conduct ex-post analyses using administrative microdata to assess the impact of implemented reforms. Ex-ante analyses address the effects of reform proposals using behavioural simulation models and experimental methods (for example, laboratory and field experiments). Based on the results of these empirical studies, researchers develop policy recommendations for designing efficient and equitable tax and transfer systems.

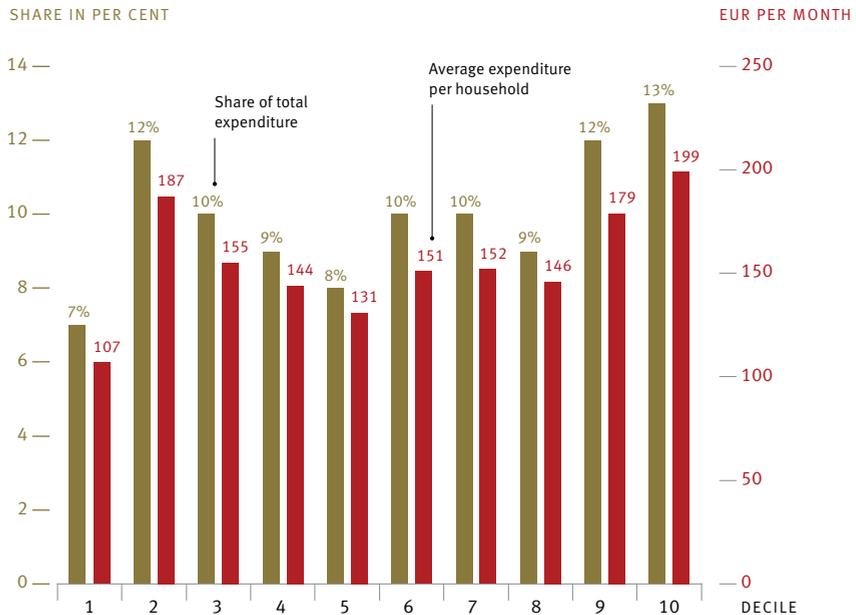
In 2016, the research area participated in several projects on behalf of the German Green party to investigate potential reform to the child allowance and options for designing a guaranteed child allowance. They also analysed the costs that would stem from directly providing specific benefits that are currently provided based on “standard needs” (Regelbedarf) and the Education and Social Participation Package (Bildungs- und Teilhabepaket).

On behalf of the Heinrich Böll Foundation, economists in this research area also investigated the distributional effects of marriage and family-related benefits in Germany. Overall, these benefits are widely distributed, but a slightly disproportionate share of expenditures and revenue shortfalls is attributable to upper income recipients. Whereas 13 per cent of expenditures go to the wealthiest 10 per cent of households, the poorest 10 per cent only receive 7 per cent of expenditures (see Figure 2 on the following page). However, the upper decile also contributes disproportionately to financing the federal budget through the income tax. The greater benefits for wealthy families are primarily attributable to fiscal benefits (matrimonial ‘splitting’ of income taxation, child allowances), the amount of which increases with greater taxable income.

Economists in the research area also conducted a project for the Federal Ministry for Economic Affairs and Energy using the ZEW Tax Transfer Simulation Model. As part of this project, they analysed the effects of introducing child allowances in the statutory pension scheme. They simulated the relief effects for families (which are potentially moderated by the interaction of the allowance with social transfers and the tax system), and estimated associated fiscal consequences. The model also considered anticipated adjustments in labour supply and demand (i.e. labour market participation and working hours). In addition, it simulated two forms of reciprocal financing: namely, raising the contribution rate for pension insurance, or raising the value-added tax.

The research area continued its work on analysing the effects of the statutory minimum wage and on a project funded by the German Research Foundation to develop a dynamic analysis model to estimate the behavioural effects of tax and transfer benefits across the entire life cycle.

2] DISTRIBUTION OF EXPENDITURE AND AVERAGE AMOUNT OF EXPENDITURE PER HOUSEHOLD BY INCOME DECILE



Source: Calculations using ZEW's tax transfer model on the basis of the SOEP v30 for the year 2012. Forms of tax relief considered included: income splitting between married couples, tax-deductible child care costs, tax relief for single parents; parental benefit, child-related ALG II contributions or housing benefit, child supplement; child benefit and tax-free child allowance; subsidies for childcare services.

RESSEARCH AREA: FISCAL POLICY AND DISTRIBUTION IN EUROPE

- Fiscal Integration in Europe
- Analysis of National Fiscal Policies in Europe

Economists in this research area study fiscal policy and fiscal integration in Europe, including various proposals for creating a European fiscal union. A particular focus is placed on analysing the efficiency effects of tax and transfer systems, as well as their redistributive and stabilising effects. Analyses are conducted using various empirical approaches and models, including the tax-benefit microsimulation model for the European Union (EUROMOD), which allows micro-based analysis of changes in respective tax and transfer policies in the EU-28 and the simulation of counterfactual policy reforms.

Research projects to date have primarily focused on analysing various proposals for a European fiscal union. The debate about different reform proposals has intensified recently, highlighting the need for sound research and evidence-based economic policy advice. Thanks to the strong reputation enjoyed by ZEW researchers in this domain, ZEW was invited by the European Parliament and the European Commission to conduct studies on the economic effects of a Europe-wide unemployment insurance scheme. ZEW economists presented their studies at academic conferences and also at two expert hearings of the European Parliament's Committee on Employment and Social Affairs. In addition, they presented findings at workshops organised by the European Commission. The opportunities and risks of a Europe-wide unemployment insurance scheme was also the subject of lively debate as part of a ZEW Lunch Debate in Brussels. In cooperation with the EU Commission and its Joint Research Centre, members of the research area are working on a project that examines how tax reforms in EU Member States would impact wealth distribution and income.

In a current research project on the analysis of national fiscal policies, the Research Group is investigating how the automatic stabilisation mechanisms inherent in tax and transfer systems have changed in Europe over the course of the financial and economic crisis. The research area is working closely with international partners from the Institute for Social and Economic Research at the University of Essex, the EU Commission's Joint Research Centre (JRC) and the OECD.

OUTLOOK

Now and in the future, the Research Group will contribute to ZEW's goal of augmenting its international visibility while also strengthening its European networks. The Research Group's success in this regard is underscored by the large number of advising projects it conducts as well as the close ties it enjoys with renowned research institutions abroad. In a new SEEK project titled "European Network on Better Institutions" (ENBI), the Research Group will collaborate with other ZEW research units to establish a network of European research institutes under ZEW's leadership, which will develop joint position papers with proposals for institutional reform for the eurozone. In the context of the SEEK project, the Research Group will focus especially on fiscal stabilisation mechanisms.

In future years, the Research Group will be extensively involved in studying regional distribution and inequality. For example, as part of the SEEK project "Fiscal and Labour Market Policy Institutions and Inequality", the Group's researchers plan to develop a highly detailed "Inequality Map" for Germany. For this purpose, they will combine regional data from various sources in order to illustrate inequality between and within regions in Germany.

As part of the "Mannheim Taxation" (MaTax) Leibniz ScienceCampus, launched in 2014, researchers will continue their work on numerous research projects, most of which involve interdisciplinary collaboration with jurists and political scientists. In addition, MaTax will be organising a number of events at ZEW in 2017 featuring high-profile speakers.

In collaboration with the Research Department “Labour Markets, Human Resources and Social Policy”, the Research Group is continuing its study on the effects of the statutory minimum wage. In 2017, it will complete development of a structural model to simulate different minimum wage levels. In addition, it will apply a “difference in differences” approach using Austria and Sweden as comparison groups to evaluate employment, unemployment and open job vacancies in Germany.

Future collaboration with the Research Group “Market Design” will furnish new opportunities. Currently, a joint project is planned to develop proposals for a better mechanism for assigning placements in day care facilities and kindergartens.

» UNDERSTANDING AND DESIGNING MARKETS.



Prof. Dr. Vitali Gretschko
Head of the Research Group
Market Design





designing markets

RESEARCH GROUP MARKET DESIGN



Prof. Dr. Vitali Gretschko
Head of Group

RESEARCH AREAS

- **Design of General Rules for Public Procurement**
Contact: Dr. Nicolas Fugger
- **Auction Market Design**
Contact: Prof. Dr. Vitali Gretschko
- **Design of Matching Markets**
Contact: Dr. Thilo Klein

MISSION STATEMENT

The Research Group “Market Design” focuses on the analysis and optimisation of markets. Its aim is to improve the performance of existing markets by actively shaping market rules. To this end, it examines the peculiarities of each market and identifies their prevailing modes of action. To find a market mechanism that helps regulators to achieve their objectives in the best way possible, the Research Group uses theoretical, experimental and empirical methods.

The first step in a research analysis is to theoretically model the market as it currently exists. Accuracy is crucial: seemingly minor details can have a decisive influence on the success of a market mechanism. When carrying out a theoretical analysis, the Research Group applies behavioural economic concepts to take the human factor into account, ensuring the findings are robust. Drawing on this preparatory work, the group then designs market mechanisms that best meet the requirements of the theoretical framework. The practical suitability of the mechanisms is then assessed in experiments or studies of existing empirical data. The overarching aim is to encourage implementation of the best performing mechanisms in real markets in order to improve the way they function.



The Research Group „Market Design“ was set up in June 2016.

RESEARCH AREA: DESIGN OF GENERAL RULES FOR PUBLIC PROCUREMENT

- General Rules for Efficient Procurement
- Optimal Delegation of Decision-Making Powers

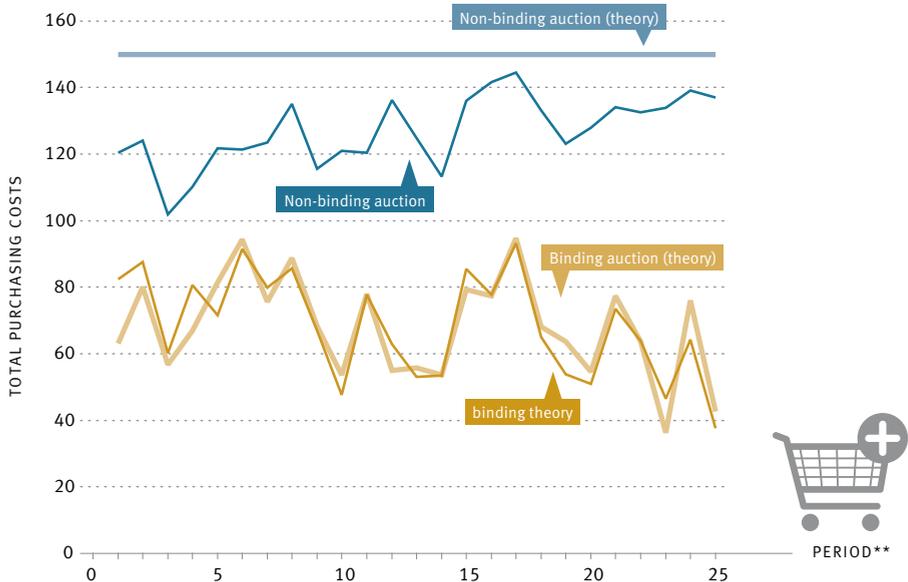
This research area analyses the optimal design of general rules for public procurement. Public procurement accounts for about 16 per cent of GDP in the European Union. Therefore, even small relative efficiency gains can generate savings in the billions. Designing a procurement process often constitutes a complex problem because several aims must be considered and weighed against each other. Due to their complexity, procurement mechanisms need to be tailored to each specific situation. Nevertheless, it is possible to determine some general rules that play a key role in generating efficiency. These rules are of paramount importance since a detailed examination of each process is almost impossible due to the large quantity and variety of procurement processes. Furthermore, this complexity often requires implementation of the procurement process to be delegated to an agent (buyer, auctioneer). These agents often have detailed information that is unavailable to the buyer. The aim is to identify decision-making powers that enable agents to use their knowledge, but which at the same time minimise potential abuse – for example, if the particular interests of the agent are not in line with the objectives of the buyer.

One study carried out by the research area examines the risk of corruption in auctions and negotiations. Researchers considered a situation in which the execution of the procurement must be delegated to an agent. This agent has a preferred bidder and is able to manipulate the client's

preferences in their favour. The study shows that increasing the transparency of an auction over a negotiation in such situations may lead to an increased risk of corruption. This study was accepted for publication in the RAND Journal of Economics in 2016.

In most reverse auctions, the goods and services on offer differ from bidder to bidder. This means that the offer with the lowest price may not be the most attractive offer for the buyer. To give the buyer the opportunity to consider quality aspects in their final decision, non-binding auctions are often part of the procurement process. This type of procurement mechanism differs from a binding auction only in that the buyer can choose freely between the offers after the bidding period has ended, and does not have to accept the lowest bid. The Research Group shows that this aspect of non-binding reverse auctions can strongly impede competition between bidders and enables collusion. The study went on to investigate ways of designing procurement mechanisms to account for differences in quality without exposing buyers to the possibility of collusion between bidders and agents. Figure 1 illustrates the findings of the study, showing the purchasing costs of the buyer in a case in which a binding auction is held (yellow), and the significantly higher total purchasing costs for a case in which the non-binding reverse auction is held (blue). This study was published in the prestigious journal Management Science.

1] COMPARISON OF PURCHASING COSTS* OF BINDING AND NON-BINDING AUCTIONS



* fictitious currency ** fictitious period of time

Source: ZEW

RESEARCH AREA: AUCTION MARKET DESIGN

- Identification of Optimal Auctions
- Minimising the Possibility of Anti-Competitive Behaviour
- Analysis of Dynamic Auction Environments

The research area “Auction Market Design” focuses on the analysis and design of specific auction markets. Examples include the public sale of energy, government bonds and mobile radio frequencies. The aim of this analysis is to identify optimal auction formats and to examine the extent to which they can be implemented. In this connection, it is important to take into account the specific market environment and the actual behaviour of the bidders. Amongst other things, the options of a bidder to hinder competition, for example through collusion with other bidders, needs to be taken into account. In particular, it is important to consider the individual auction as part of a dynamic and changing environment. This enables one to assess the long-term impact the design has on incentives for innovation and on competition.

In auctions of licences, such as spectrum auctions, bidders are often required to demonstrate that they are able to actually provide the service in question should they be awarded a licence. Proving this can be costly and so can discourage bidders from participating in the auction. A seemingly simple way to reduce the cost of demonstrating a bidder’s capacity to deliver is to only demand proof from the winning bidder after the auction has taken place, rather than from all bidders before the sale. With the help of a game-theoretical model, the Research Group shows that this simple logic is not always correct. In some cases, it is beneficial for the auctioneer to require proof of market viability from all bidders before the auction, especially in cases where the cost of providing proof is high. Put simply, demanding proof after the auction leads the bidder to anticipate the cost and include it in their bid. If proof is required prior to the auction, the costs have already been incurred („sunk“), and so play no further role in the bidding, meaning that competition between bidders is more intense during the auction. This effect can outweigh the negative effect of high costs of proof on participation in bidding. The findings have been accepted for publication in the *Economic Theory Bulletin*.

Further findings of the group’s research on the subject of spectrum auctions will be published in the book “Handbook of Spectrum Auction Design”. It is often the case that the auctioneer knows the number of participating bidders when setting up the auction, and this number has a decisive influence on the format chosen for the auction. In contrast to the auctioneer, bidders are not typically aware of the number of competitors they are bidding against, but when possible can draw conclusions from the auction format chosen by the auctioneer. The Research Group investigated whether the auctioneer could exploit his private information regarding the number of bidders to increase his own profit at the expense of the bidder’s profit. To do so, the group used game theoretical methods to determine the optimal choice of auction format depending on the number of bidders, and the auctioneer’s optimal policy for sharing information regarding the number of competitors with bidders. The theoretical predictions were then subjected to experimental testing. Early results show that, contrary to theoretical predictions, the auctioneer can

exploit the private information, as bidders have difficulty correctly anticipating the strategic choice of auction format.

RESEARCH AREA: DESIGN OF MATCHING MARKETS

- Analysis of Existing Allocation Procedures
- Design of Stable Matching Algorithms

The research area “Design of Matching Markets” focuses on the analysis and design of markets in which the use of money is impossible or undesirable. Prominent examples include the allocation of school and university places or the distribution of donor organs. Furthermore, there are markets in which participants do exchange money, but at the same time, the emergence of market prices is prevented by other restrictions. The market price is relevant for efficiently managing the allocation, as is the case in labour markets. A major challenge in these markets is to design the allocation mechanism in a way that all participants have an incentive to reveal their true preferences. This can prevent individual participants from taking advantage of others by proceeding strategically reporting their preferences. It is also important to achieve stable and efficient allocations given the preferences of the market participants.

Going forward, the research area “Matching Markets” will be dedicated to investigating how efficient allocation can be achieved in markets in which the exchange of money is not desirable. There are also some markets that allow the exchange of money, yet in which other restrictions prevent the emergence of a market price. One example would be markets for recent graduates or trainees. Efficient allocation can not be achieved simply by market price in these cases. Very low awareness of the problem at relevant institutions is a fundamental challenge when designing matching markets. For this reason, the first step for the Research Group is to identify poorly designed matching markets. The group will then determine how the design of the allocation model can be improved and calculate the extent of the efficiency gains to be expected from a redesign of the allocation rule. Quantifying the potential gains will serve to increase the awareness of the problem amongst decision makers. One area in which problems with the current model have already been identified is the allocation of nursery school places.

OUTLOOK

In 2017 the Research Group will continue to pursue the goal of improving the active design of markets. Markets suffering from market failures will be identified and suggestions for improvement will be analysed both theoretically and experimentally. The mechanisms which have proven their effectiveness in these tests will then be implemented in the field.

A particular emphasis will be placed on further developing activities in the research area of “Matching Markets”, whose the medium-term research objective is the concrete design of fairer and more efficient mechanisms. A starting point for research will be the allocation of nursery school places.

Cooperation with other research units at ZEW will continue to grow. After having identified projects with major intersections in all other research units this year, in 2017 these opportunities for collaboration will be pursued and implemented in practice. Potential areas for collaborative theoretical, experimental and empirical research include the design of broadband subsidies, mechanisms for issuing government bonds and the design of technology markets.

» FAIR COMPETITION AND EFFECTIVE REGULATION.



Prof. Dr. Kai Hüschelrath
Head of the Research Group
Competition and Regulation





competition

RESEARCH GROUP COMPETITION AND REGULATION



Prof. Dr. Kai Hüschelrath
Head of Group



Dr. Oliver Woll
Deputy Head

RESEARCH AREAS

- **Competitive Strategy and Competition Policy**
Contact: Dr. Wolfgang Briglauer, Dr. Sven Heim
- **Competition and Regulation in Network Industries**
Contact: Dr. Dominik Schober, Dr. Oliver Woll

MISSION STATEMENT

The “Competition and Regulation” Research Group primarily studies competition and regulation in network industries as well as competitive strategy and competition policy. The goal of this research is to encourage the adoption of experience and evidence-based competition and regulatory policies. The Research Group systematically takes into account incentives created by laws and law enforcement as well as the strategic behaviour of firms. Interdisciplinary collaboration with legal, business, and engineering scholars is particularly important in the Group’s work.

Studying this broad and complex subject area necessitates a variety of methods and approaches, including economic investigations of legal practice, market studies, an analysis of incentives arising from existing legislation (which may include comparisons between laws and institutions), and the empirical examination of effects on firm behaviour. Researchers also use applied theoretical and empirical analyses to generate basic insights into the behaviour of market actors beyond the effects of law and its enforcement.



NOTEWORTHY

The Research Group works closely with the Leibniz ScienceCampus “Mannheim Centre for Competition and Innovation” (MaCCI), founded by ZEW and the University of Mannheim in 2012.

RESEARCH AREA “COMPETITIVE STRATEGY AND COMPETITION POLICY”

- Economic Analyses of Mergers
- Public and Private Law Enforcement of Competition Law
- Evaluation of Competition Policy Institutions and Rules
- Industry Studies

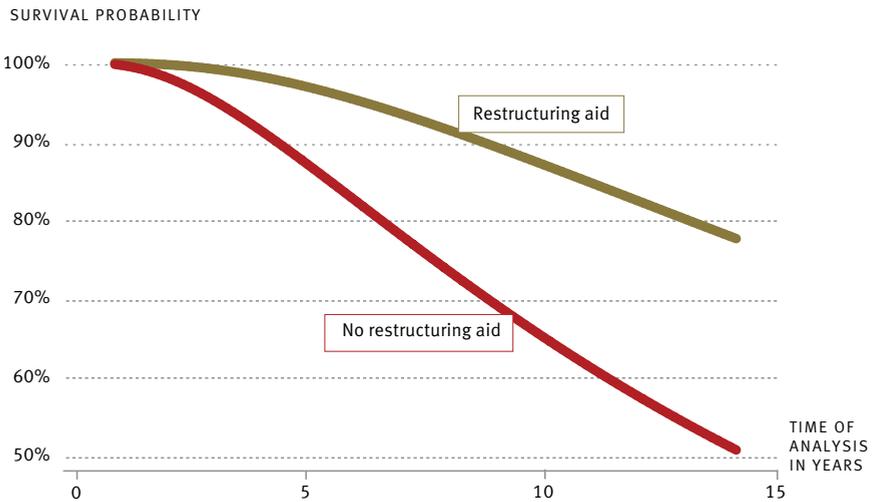
In this research area, ZEW economists study how firms gain, defend, and expand competitive advantages in the marketplace. The results are used to assess the economic efficiency of company behaviour and to draw conclusions regarding competition policy. Competitive strategy and competition policy influence each other in many ways and both are mutually affected by existing antitrust regulations. Against this backdrop, the Research Group studies the overlap between economics, business management, and law, applying both theoretical and empirical methods. A key goal is to generate original insights by combining and expanding expertise in all three areas. A particular emphasis is placed on assessing the benefits of mergers for economic welfare, and on coordination between companies in making production and sales decisions.

In the topic area of “Evaluation of Competition Policy Institutions and Rules”, researchers conducted a study on behalf of the European Commission to examine whether government re-

structuring aid is an effective instrument for rescuing firms in financial distress. As shown in Figure 1, the granting of governmental aid leads to a statistically significant and meaningful survival advantage for firms receiving aid.

Beyond examining survival probabilities, the study also investigated the probability of financial recovery amongst aided and non-aided firms. The findings clearly suggest that the impact of restructuring measures is not immediate, but instead, is most evident in the longer term. Thus, six years after the start of the restructuring process, 45 to 47 per cent of aided firms were back on their feet financially, versus only 26 to 31 per cent of firms that did not receive aid. Furthermore, 40 to 52 per cent of the non-aided firms had to leave the market, compared to only 26 to 31 per cent of the aided firms.

1] ESTIMATED SURVIVAL PROBABILITY AMONGST AIDED AND NON-AIDED FIRMS



The figure shows the survival probability of firms who received government restructuring aid (green graph) and those who received no such aid (red graph). It is shown that the granting of government aid leads to a significant survival advantage for firms receiving aid.

Source: ZEW

In the topic area “Public and Private Enforcement of Competition Law”, researchers applied the database they had previously developed on European Commission cartel decisions to investigate the effectiveness of the new settlement procedure introduced in 2008 on reducing the number of appealed decisions. Their findings show that the new procedure has in fact led to a sustained and statistically significant reduction in the number of appeals filed against Commission decisions, and has thus generated substantial savings.

In the topic area “Industry Studies”, cooperative activities were extended with ZEW Research Associate Professor Joseph E. Harrington, Jr. (University of Pennsylvania, Wharton School). Researchers completed a new project on the German cement cartel. The study found theoretical and empirical evidence that the German cement cartel discouraged cement dealers from importing significantly cheaper cement from abroad by assigning a portion of cartel profits to the cement dealers.

As part of the new SEEK project “Digital Marketplaces and Platforms”, research work in the area of consumer search behaviour has started to yield early results. Together with ZEW Research Associate Professor Klaus Gugler, a ZEW discussion paper was published that examined the influence of consumer search behaviour and the intensity of competition on price formation in the German retail electricity market.

The fourth MPI-ZEW Private Law and Economics Workshop was held in November 2016 in Mannheim. The event is dedicated to the goal of bringing together young researchers from the legal sciences and economics and inviting them to engage in interdisciplinary discourse. In addition to featuring several expert talks, this year the workshop programme included for the first time two lectures in legal studies and two lectures in economics.

RESEARCH AREA: COMPETITION AND REGULATION IN NETWORK INDUSTRIES

- Trends in Energy, Telecommunication and Transport Markets
- Impact of Sector-Specific Regulation on Market Structure and Market Conduct
- Development and Evaluation of Market Designs, Network Regulations, and Policy Instruments in Energy and Telecommunication Markets

Researchers in this area study the design of effective and efficient regulatory schemes. Important questions in this regard concern how sector specific regulation impacts market structure and market behaviour, as well as how to ensure adequate investment for the replacement or expansion of infrastructure capacity. With regard to energy markets, multiple factors require the constant reassessment of current conditions from an interdisciplinary perspective, including the increasing integration of European energy markets, the German *Energiewende*, and the need to integrate a high share of renewables in the power system. In telecommunication markets, substantial investments and risks associated with new fibre-optic communication networks raise important questions – for example, about the terms of network access imposed by market participants, and about the necessity of sector specific ex-ante regulation in general.

In the topic area “Development and Evaluation of Market Designs, Network Regulations, and Policy Instruments in Energy and Telecommunication Markets”, researchers analysed new proposals for greater security of supply in the power system as part of the project “Reserve Markets in Change” (ReWal), sponsored by the Federal Ministry for Economic Affairs and Energy. In collaboration with the Institute of Power Systems and Power Economics (IAEW) at RWTH Aachen, researchers evaluated current policy instruments in terms of the technological, economic, and regulatory challenges faced by balancing energy markets and the power system in general. In addition, they examined how balancing energy markets are affected by the feed-in of renewable energy, the design of products for trading balancing energy, projected future needs, interaction between various market segments, and auction design issues. Additional economic studies relate to abusive strategic procurement behaviour in reserve energy markets.

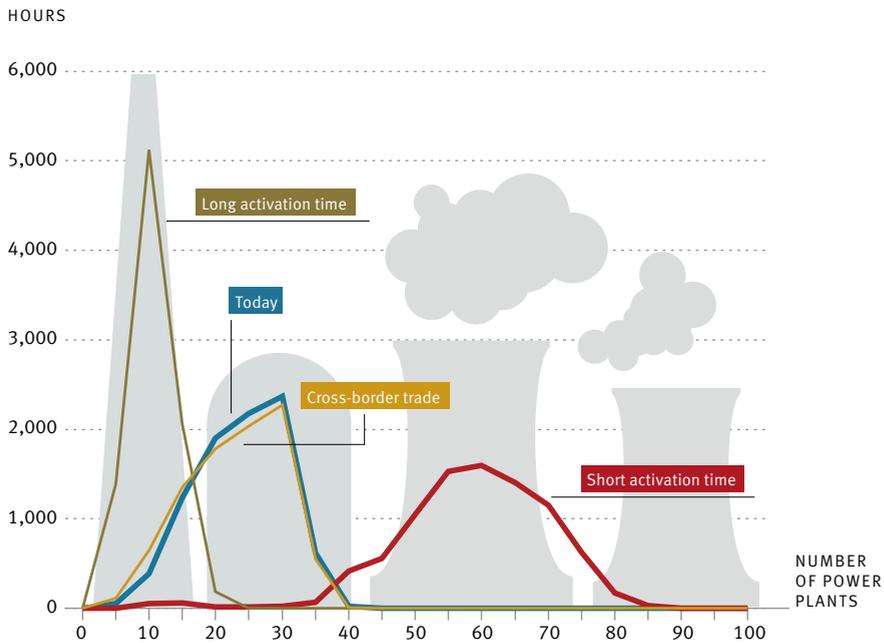
Figure 2 shows that reform of the authorised activation times for power plants has a significantly greater effect on the number of power plants in the market than the cross-border trade of balancing energy. Shortening the activation times, that is, response time for the grid operator, leads to a significant increase in the number of power plants in the market along with resultant positive effects on lowering market concentration and the potential for excessive market power. More than 30 representatives from industry and government came to ZEW to attend a final workshop for the project.

This year, researchers in this area completed another major project, the Helmholtz Alliance ENERGY-TRANS. The Alliance – which also included the ZEW research departments “Environmental and Resource Economics, Environmental Management” and “Economics of Innovation and Industrial Dynamics” – seeks to support the German *Energiewende* by shedding light on issues surrounding sustainability and social compatibility for future network infrastructure. Together with sociologists and psychologists, the researchers published a paper on consumer behaviour and security of supply in utilities policy.

In the topic area of “Trends in Energy, Telecommunication and Transport Markets”, ZEW researchers, in cooperation with Professor Oliver Falck of the ifo Institute – Leibniz Institute for Economic Research at the University of Munich, examined whether government aid for the expansion of broadband Internet in Bavaria actually leads to better Internet connectivity in rural areas and whether this improvement has positive effects on regional labour markets. The study showed that between 16.8 per cent and 23.2 per cent more households had access to broadband Internet in those Bavarian communities receiving aid than in communities without government aid. Moreover, the researchers showed that on average, seven additional full-time wage-earners chose to live in the aided communities due to government aid in broadband expansion, showing that aided broadband expansion helps counteract further depopulation of rural areas.

In May 2016, the research area hosted the fifth Mannheim Energy Conference together with the Research Department “Environmental and Resource Economics, Environmental Management”. The conference brought together internationally renowned speakers, including Christophe Gence-Creux, PhD (Agency for the Cooperation of Energy Regulators [ACER], EU), Professor Nils-Henrik von der Fehr (University of Oslo) and Assistant Professor Mar Reguant (Northwestern University, USA).

2] DISTRIBUTION OF THE NUMBER OF POWER PLANTS IN THE OPERATING RESERVE MARKET



The figure shows the distribution of the number of power plants in the operating reserve market over the hours of a year for three different reform measures as well as the situation as it is today (blue graph). The green and the red graph show the results for longer or shorter activation times. The yellow graph represents cross-border trade. Shortening the activation times leads to a significant increase in the number of power plants in the market.

OUTLOOK

The founding of the Leibniz ScienceCampus “Mannheim Centre for Competition and Innovation” (MaCCI) in 2012 expanded and consolidated the close cooperation between the “Competition and Regulation” Research Group and the School of Law and Economics at the University of Mannheim. This collaboration will be further intensified in coming years, as will joint research projects with ZEW Research Associates.

The Research Group will continue its on-going work on several research topics. Within the topic area “Public and Private Enforcement of Competition Law”, researchers will examine the factors that determine the lifespan of a cartel or may lead to its collapse. In the topic area of “Economic Analyses of Mergers”, researchers will analyse the price effects resulting from the 2015 merger of the two largest long-distance inter-urban bus transport providers – MeinFernbus and FlixBus.

In the topic area “Evaluation of Competition Policy Institutions and Rules”, researchers will build on a project completed in 2016 on behalf of the European Commission, titled “Ex-post Evaluation of the Impact of Restructuring Aid Decisions on the Viability of Aided (Non-financial) Firms”, to conduct further research evaluating the impact of government aid.

In the topic area of “Industry Studies”, ZEW economics will continue to examine selected competitive implications of the liberalisation of the long-distance bus transport market in Germany. In the area of petrol station markets, researchers will expand their analysis of the reference markets to investigate the relationship between tax incidence and the intensity of competition.

In the topic area of “Trends in Energy, Telecommunication and Transport Markets”, researchers plan to pursue several subprojects related to different branches. In the area of energy, they will focus on the impact of systemic transformations resulting from the German energy reforms and European market integration. On the consumer side, they will focus on the provider-switching behaviour of electricity customers and shifts in usage resulting from smart metering.

A key question in the area of telecommunications markets is when and under what conditions network owners are required to provide access to service-based competitors – particularly in view of the major investments and risks involved in the expansion of fibre-optic communication networks. Important related issues in competition policy concern the appropriate levels of public subsidies as well as the extent to which cooperation schemes for network expansion are legally permissible and economically efficient.

Extending across multiple topic areas, the Research Group will further expand its cooperation with the ZEW research departments “Digital Economy” and “International Finance and Financial Management” as part of the new SEEK project “Digital Marketplaces and Platforms”. Similarly, the Research Group will continue its long-standing successful and close cooperation with the ZEW Research Department “Environmental and Resource Economics, Environmental Management”, including a new Kopernikus Project to monitor the clean energy transition. Planning is under way for several projects in the area of energy and telecommunications markets in collaboration with the newly founded ZEW Research Group “Market Design”. These projects will focus especially on combining theoretical and empirical research.



SCIENTIFIC OUTPUT, COMMITTEES AND EXTERNAL RELATIONS

// SCIENTIFIC OUTPUT

// COMMITTEES AND EXTERNAL RELATIONS

COMMITTEES AND EXTERNAL RELATIONS

SCIENTIFIC

SCIENTIFIC OUTPUT

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- Asatryan, Z., Dissertation award: Friedrich-August-von-Hayek Prize 2016, Akademie für wissenschaftliche Weiterbildung e. V. at the University of Freiburg.
- Dörrenberg, P., Best Paper Award, European Association of Young Economists (EAYE), Frankfurt a. M.
- Evers, M.T., Best Paper Award, Stiftung Wissenschaftsforum Wirtschaftsprüfung und Recht, Frankfurt a. M.
- Gregory, T., Best Paper Award, UniCredit & Universities Foundation, Milan, IT.
- Kesler, R., "The Future World of Work" Research Award, Volksbank Weinheim Foundation.
- Kirschenmann, K., Anerkennung für Paper-Publikation, Foundation for Promotion of Securities Markets in Finland, Helsinki, FI.
- Steffen, S., Best Paper Award, SUERF – The European Money and Finance Forum, Vienna, AT.

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- Schulte, Patrick, Goethe University Frankfurt, "Empirical Essays on Technical Change, ICT and Energy Demand".

Economics of Innovation and Industrial Dynamics

- Murmann, Martin, University of Zurich, "Essays on the Human Capital of Employees in New Ventures".

International Finance and Financial Management

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- Rehse, Dominik, EBS Universität für Wirtschaft und Recht, "Aufsätze zur Schätzung von Behandlungseffekten".

Corporate Taxation and Public Finance

Schröder, Christoph, Eberhard Karls University of Tübingen, "International Banking, Fiscal Institutions and Public Debt: Essays on Financial Market and Fiscal Policy".

Streif, Frank, University of Mannheim, "Fiskalpolitische Herausforderungen in Europa: Besteuerung, Verschuldung und Direkte Demokratie mit mehreren Gebietskörperschaften".

Competition and Regulation

Heim, Sven, Justus Liebig University of Gießen, "Six Empirical Essays on Competition and Regulation in Energy Markets".

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Workshop: Internationalisation of the German Cultural and Creative Industries – New Markets, New Opportunities? (15 June 2016)

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Organisation: Philipp Böing (ZEW), Georg Licht (ZEW)

Workshop: Reserve Energy Markets in Transition (8 July 2016)

Organisation: Dominik Schober (ZEW)

Workshop: Fifth Mannheim Workshop on Empirical Tax Research (1 – 2 September 2016)

Organisation: Katharina Nicolay (ZEW)

Conference: Labor Market Adjustments to Digitization and the Future of Work (7 – 9 September 2016)

Organisation: Terry Gregory (ZEW), Florian Lehmer (IAB), Michael Tiemann (BIBB)

Workshop: Environmental Economics Analyses with the Official Firm Data for Germany (AFID) of the Research Data Centre (15 – 16 September 2016)

Organisation: Kathrine von Graevenitz (ZEW)

Conference: Beijing Humboldt Forum (BHF) 2016

(17 – 19 September 2016)

Organisation: Irene Bertschek (ZEW), Manuel Lauer (ZEW)

Conference: Project Future: Working World 4.0

(19 September 2016)

Organisation: Irene Bertschek (ZEW), Daniel Erdsiek (ZEW),
Ministry of Economic Affairs, Labour and Housing of the State
of Baden-Württemberg

Workshop: ZEW-CIDER Workshop Autumn 2016

(28 – 30 September 2016)

Organisation: Friedhelm Pfeiffer (ZEW), Ramona Stieber (ZEW)

Conference: Third Annual MaTax Conference (4 – 5 October 2016)

Organisation: Philipp Dörrenberg (ZEW), Katharina Nicolay (ZEW)

Conference: Single-Family Homes Under Pressure?

(13 – 14 October 2016)

Organisation: Oliver Lerbs (ZEW)

**Workshop: ZEW Workshop on Assimilation and Integration
of Immigrants (13 – 14 October 2016)**

Organisation: Martin Lange (ZEW)

**Conference: Global Environmental Challenges – From International
Negotiations to Local Implications (20 – 21 October 2016)**

Organisation: Christiane Reif (ZEW), Dirk Rübhelke (TU Freiberg)

Conference: Eighth ReCapNet Conference on Behavioural

Real Estate (3 – 4 November 2016)

Organisation: Michael Schröder (ZEW)

**Conference: MaCCI Law and Economics Conference on Cartel
Damages in Europe: The New Framework after the Directive**

(10 – 11 November 2016)

Organisation: Stefan Fröbing (ZEW)

Workshop: ZEW-FDZ Data User Workshop (16 – 17 November 2016)

Organisation: Sandra Gottschalk (ZEW)

Workshop: New Developments in Eco-Innovation Research

(24 – 25 November 2016)

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Workshop: Fourth MPI-ZEW Law & Economics Workshop

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Workshop: SEEK Workshop on Fiscal Governance in the Eurozone

(24 – 25 November 2016)

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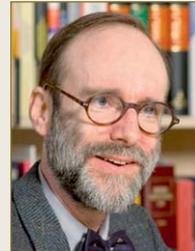
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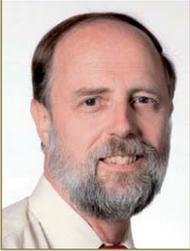
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The Sponsors' Association funds new research projects at ZEW and provides a platform for exchange between the worlds of business, politics, and academia. In addition, the association supports ZEW in organising and hosting events for a broad audience which feature high-level speakers from the realms of politics and research.

All members of the Sponsors' Association are listed at www.zew.de/sponsors-association.

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- Chairman of the ZEW Sponsors' Association:
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In November 2016 the ZEW Sponsors' Association bid farewell and expressed their sincere thanks to Dr. Uwe Schroeder-Wildberg, who stepped down after having served 12 years on the board. Newly admitted to the association's board was Claudia Diem, who assumed the office of treasurer; here with Thomas Kohl (left), ZEW Director, and Dr. Alexander Selent (right).

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The ZEW alumni network provides a forum for former ZEW staff to stay in touch with colleagues and with the institute. ZEW keep alumni posted on news about the institute, research results and professional training seminars. Former staff can provide ZEW with valuable input for research work. ZEW alumni traditionally meet on the occasion of the ZEW Economic Forum.

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Gathering of the ZEW alumni network at the 2016 Economic Forum



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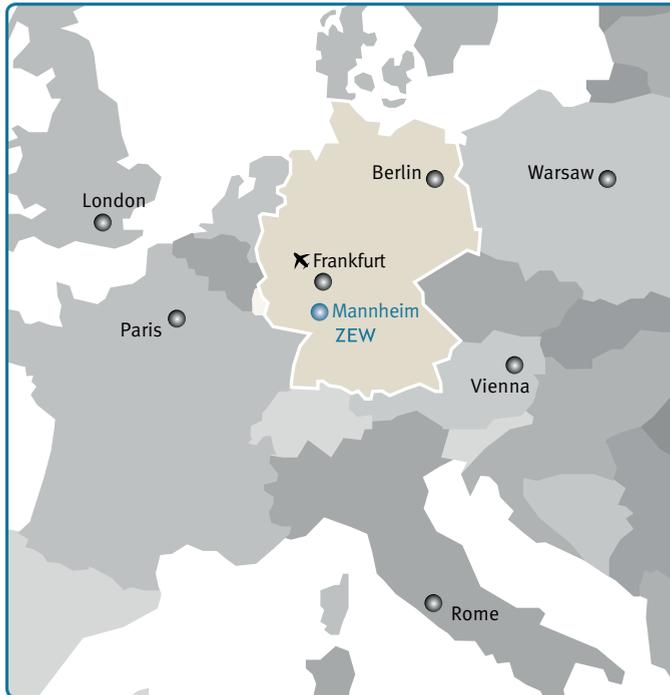
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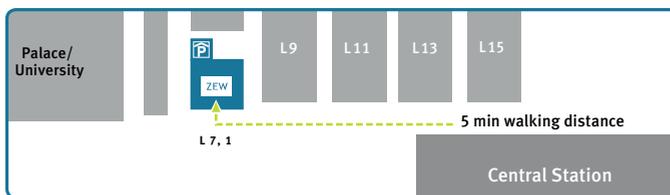




Travelling by plane via Frankfurt International Airport

It is a 30-minute journey from Frankfurt International Airport to Mannheim Central Station via ICE high-speed train.

Travel time to Frankfurt by plane (non-stop): from New York: approx. 8 hrs/
from Beijing: approx. 10 hrs



By foot from Mannheim Central Station

It is a five-minute walk (300 m) from Mannheim Central Station to ZEW.

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