

Annual Report 2012



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ZEW ANNUAL REPORT

2012









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Setting the course for ZEW's future: Professor Clemens Fuest (centre) has been appointed successor to ZEW President Professor Wolfgang Franz. The ZEW Board of Directors, Thomas Kohl and Wolfgang Franz, with Clemens Fuest, Gerhard Stratthaus (at the time Chairman of the ZEW Supervisory Board) and Eggert Voscherau (Vice-Chairman).

January 2012

BIG NEWS AT YEAR'S START

The new year began with a bang at ZEW. At the end of January, after an intense search for a successor to ZEW President Wolfgang Franz, the Supervisory Board announced that Oxford professor Clemens Fuest would assume the helm at ZEW on 1 March 2013. The decision, which the board arrived at after only a few months of deliberation, met with overwhelming support among ZEW staff. Thomas Kohl, ZEW's director of business and administration, said, "The rapid choice of a successor marked an auspicious start to the year. It ensures that ZEW can continue to expand its dynamic research without delay, especially abroad."

March 2012

SEEK-ING SUSTAINABLE GROWTH

How can European countries foster sustainable growth while conserving resources and strengthening innovation? This is the question that some 200 international guests from academia, business, and politics sought to answer at the second SEEK conference, held at ZEW in Mannheim. Some memorable moments came from Baden-Württemberg's Minister of the Environment, Franz Untersteller, who spoke about the factors promoting eco-friendly growth, and the Executive Director of the Institute for Advanced Sustainability Studies (IASS), Professor Klaus Töpfer, who argued that environmentally conscious trade and profitability need not be a contradiction. SEEK conferences are designed to present the research findings of the SEEK programme. Funded by the State of Baden-Württemberg, SEEK stands for "Strengthening Efficiency and Competitiveness in the European Knowledge Economies". Or, as Franz Untersteller put it at the conference, "SEEK means the pursuit of knowledge".



Baden-Württemberg's Minister of the Environment, Franz Untersteller, opened the SEEK conference "The Green Growth Challenge" at ZEW on March 9, 2012.

Sustainability and profitability need not be a contradiction: Klaus Töpfer, former federal minister and former executive director of the United Nations Environment Programme, gave an entertaining and thoughtful address at the SEEK conference.



March 2012

MACCI – ECONOMISTS AND LAWYERS MEET

The inaugural conference at the Mannheim Centre for Competition and Innovation (MaCCI) brought a number of internationally renowned legal scholars and economists to ZEW. The first of many events within the scope of MaCCI, the conference addressed corporate competitive behaviour and the effectiveness of global systems for protecting intellectual property. MaCCI is a ScienceCampus funded by the State of Baden-Württemberg and the Leibniz Association with a research framework that is unique in Germany and Europe. MaCCI is a joint project of ZEW and the School of Law and Economics of the University of Mannheim.



Science meets politics at the inaugural conference of the Leibniz ScienceCampus in March 2012: Harvard economist Professor Frederic M. Scherer...

...and Dr Simone Schwanitz, Director at the Ministry of Science, Research and the Arts of Baden-Württemberg. The federal state funds the ambitious project of ZEW and the University of Mannheim.





Abbot Primate Notker Wolf gives a lecture for some 400 guests on the topic "Financial Markets and Ethics – to whom are Financial Markets Answerable?" in the series "Mannheim Economic and Monetary Talks" at ZEW.

March 2012

CLERGYMAN SPEAKS ABOUT MONEY, GREED

What subject can easily attract some 400 guests to ZEW? Notker Wolf, the Abbot Primate of the Order of Saint Benedict and Chancellor of the Pontifical Atheneum of St. Anselm, supplied the answer in a lecture on financial markets and ethics. Peppared with anecdotes from religious life, he explained what brought a clergyman to think about financial markets, and analysed the difficulties of living a life of moderation when faced with the allure of mind-boggling profit. But pessimism is not Wolf's thing. He urged the audience to remain confident about the future and trust in God. Wolf's talk was part of the lecture series Mannheim Economic and Monetary Talks, which is funded by the Rhine-Neckar Banking Association.

April 2012

EUROPE'S YOUNG ECONOMISTS IN MANNHEIM

Some 200 PhD students, postdocs, and junior professors assembled at ZEW in Mannheim for the Spring Meeting of Young Economists (SMYE) to discuss research and develop new ideas. The SMYE is the largest conference of its kind in Europe and takes place in a different country each year. The keynote speakers at the conference were Professor Armin Falk of the University of Bonn, Dr Ayhan Kose from the International Monetary Fund, and Dr Mary Amity of the Federal Reserve Bank of New York. At the end of the conference Liqiu Zhao of the University of Leuven received the Best Paper award for his work on the geographical interaction of labour markets.

ZEW hosts the largest European conference for young economists: Professor Armin Falk (University of Bonn) gives a lecture at the Spring Meeting of Young Economists in front of some 200 doctoral students and postdocs in economics.



June 2012

THE EURO CRISIS – NO END IN SIGHT

The 2012 ZEW Economic Forum, "Prospects for the Euro", was devoted to analysing the economic crisis and identifying ways to avoid similar crises in the future. In the first session the members of the high-ranking panel – Professor Clemens Fuest (at that time Oxford University), Ulrich Kater (DekaBank), Professor Manfred Neumann (University of Bonn) and Professor Hans-Werner Sinn (Ifo Institute) – discussed ways out of the crisis and strategies for reducing national debt. In the second session ZEW researchers presented findings from current studies on investment and taxes, on Frankfurt as a financial centre, and the German export boom. The forum ended with a lecture by president of the Deutsche Bundesbank Jens Weidmann on the medium-term role of monetary policy. Weidmann advocated the creation of a European fiscal union combined with a high level of national sovereignty as a way to restore eurozone stability.





ZEW President Wolfgang Franz welcomes the president of Deutsche Bundesbank, Dr Jens Weidmann, to the ZEW Economic Forum. Some 400 participants attended his speech titled "Everything Flows? – The Future Role of Monetary Policy".

Renowned experts on the podium of the ZEW Economic Forum discussed the "Prospects for the Euro": (from left to right) Dr Ulrich Kater (Deka Bank), Professor Hans-Werner Sinn (Ifo Institute), Professor Wolfgang Franz, Professor Clemens Fuest (at the time University of Oxford), Professor Manfred Neumann (University of Bonn).



July 2012

“CLIMATE PROTECTION DILEMMA” IN DUBLIN

At the Euroscience Open Forum (ESOF) in Dublin, Europe’s largest science conference, ZEW presented its computer simulation “The Climate Protection Dilemma.” The game gives visitors the chance to take part in virtual international negotiations on climate protection. Its purpose is to show how difficult it is to find multinational agreements when “free riders” seek to shift the responsibility of climate protection on to other countries while profiting from the results – for many visitors at the ESOF, a real eye opener.

At the “2012 Sustainability Days”, Dr Claudia Hermeling (ZEW) explains the simulation “The Climate Protection Dilemma” which gives visitors the chance to visualise the difficulties international negotiations on climate protection are facing.





Jitao Tang of Rutgers University, US, receives the 2012 Heinz König Young Scholar Award. Professor Brian R. Copeland (University of British Columbia), Thomas Kohl, Professor Wolfgang Franz, Professor M. Scott Taylor (University of Calgary) and Professor Andreas Löschel (from left to right) congratulate him.

October 2012

JITAO TANG DELIGHTED TO RECEIVE YOUNG SCHOLAR AWARD

For the 2012 ZEW Summer Workshop 15 young scientists from Africa, China, North America, and Europe assembled to present their research on this year's topic: international trade and environmental protection. It was also an opportunity to present Jitao Tang of Rutgers University with the Heinz König Young Scholar Award for his work on how environmental regulations impact foreign direct investment.

The award is named after the late founding director of ZEW, Professor Heinz König, and honours young scholars who have performed outstanding empirical research.

July to October 2012

ZEW GOES TO CHINA – CHINA COMES TO ZEW

In recent years ZEW has put considerable emphasis on intellectual exchange and research collaboration with scientists from China, as well as on transferring knowledge to professionals and executives from the country. In 2012 numerous guests from a variety of Chinese institutions visited ZEW in Mannheim. Together with ZEW staff, the prestigious Fudan University in Shanghai organised the workshop “Challenges and Countermeasures for Manufacturing-Based Economies: Resource Scarcity, Currency Appreciation, and Trade Surplus”. In addition, an informational programme introduced managers from Beijing’s statistical authorities to ZEW activities and research. A 25-member delegation from the Chinese Ministry of Industry and Information Technology was particularly interested in learning about ZEW’s economic forecast expertise and its applicability to China.



Co-operation with Chinese partners is becoming more and more intense: a delegation of the Fudan University in Shanghai...



...as well as high-level representatives from the Chinese Ministry of Industry and Information Technology in Beijing were welcomed by ZEW scientists and the Board of Directors.



Recognition for his lifelong commitment to research, teaching, economic policy advice and his position as president of ZEW: Wolfgang Franz receives the Mercury Prize from Dr Herbert Müller, at the time president of the Chamber of Commerce and Industry of the Stuttgart region.

November 2012

PRESIDENT RECEIVES MERCURY PRIZE

The Stuttgart Chamber of Commerce and Industry awarded the Mercury Prize to ZEW President Wolfgang Franz for his lifelong commitment to research, teaching, and economic policy advice. Named after the Olympian god and the patron of trade, the prize honours persons for outstanding service to the economy in Germany and Europe. In his laudatio, Dr Herbert Müller, at the time president of the Stuttgart chamber, singled out Franz for his engagement as an economics professor at the universities of Stuttgart, Konstanz, and Mannheim, his stellar work at the head of ZEW, and his expertise as a long-time member and chair of the German Council of Economic Experts. The award ceremony took place at the presentation of the annual report of the German Council of Economic Experts at the Baden-Württemberg Bank in Stuttgart.

December 2012

WILL THE TRANSITION TO RENEWABLES SUCCEED? MONITORING PROGRAMME UNDER REVIEW

Andreas Löschel, the chairman of the expert commission charged with evaluating the German government's Energy of the Future monitoring programme, presented the commission's initial assessment to federal ministers Dr Philipp Rösler and Peter Altmaier in Berlin. The commission experts examined the programme's most recent report and analysed the objectives set and the measures taken for bringing about Germany's planned transition to renewable energies, known as the "Energiewende." Löschel – who is also head of the ZEW Research Department of "Environmental and Resource Economics, Environmental Management" – presented some of the commission's findings to about 120 invited guests at an evening event organised by ZEW at Baden-Württemberg's State Representation in Berlin.

ZEW environmental economist Professor Andreas Löschel chairs the commission of experts monitoring the energy transition process "Energie der Zukunft". Federal ministers Dr Philipp Rösler and Peter Altmaier receive the commission's first assessment in Berlin.



December 2012

'T WAS THE NIGHT BEFORE CHRISTMAS,
WHEN ALL THROUGH THE HOUSE
NOT A CREATURE WAS STIRRING,
NOT EVEN A MOUSE

2012 had an extra Christmas surprise in store for the kids under care at the Wespinstift children and youth outreach centre: a party complete with presents, apple punch, and baked goods. ZEW employees organised the party and donated the presents, which the children had wished for in colourful letters to Santa hung on the ZEW Christmas tree at the beginning of Advent. A staff member had proposed the idea, and everyone decided to participate. At the party, the children thanked ZEW staff with songs, poems, and hand-painted calendars.

Christmas gifts at ZEW: staff members of the institute provided the gifts for the children and teenagers of "Wespinstift" outreach centre in Mannheim.





Together with Birgit Maaßen-Rux, director of "Wespinstift", the kids celebrated a Christmas party at ZEW. Priska Flörsch (right) had had the idea to organise the event.

EDITORIAL

- ▶ LETTER FROM THE MINISTER OF SCIENCE, RESEARCH AND THE ARTS OF BADEN-WÜRTTEMBERG
- ▶ LETTER FROM THE PRESIDENT OF THE LEIBNIZ ASSOCIATION
- ▶ LETTER FROM THE BOARD OF DIRECTORS

LETTER FROM THERESIA BAUER, MINISTER OF SCIENCE, RESEARCH AND THE ARTS OF BADEN-WÜRTTEMBERG



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ZEW is one of the most prestigious economic research institutes in Europe. Research at ZEW addresses a broad spectrum of topics, ranging from sustainable economic growth and innovation policy to the regulation of financial markets and macroeconomic analysis. ZEW places strong emphasis on promoting up-and-coming scientists: the average age of ZEW researchers is 32. A continuous flow of knowledge and new ideas from universities is thus ensured.

The monetary and debt crisis in Europe was a major topic in 2012, not only in the worlds of academia and business, but also for EU citizens and tax-payers. ZEW scientists dedicate their research to strategies leading out of the crisis – and preventing future crises.

Countermeasures against the euro crisis are urgently needed. The recent years have shown, however, that achieving consensus on appropriate measures is difficult. In times of crisis, the demand for economic expertise and independent policy advice is particularly high. For German and European institutions, ZEW has been a credible and valuable source of knowledge for many years.

The fact that Professor Andreas Löschel, research unit head at ZEW, was appointed chairman of the expert commission evaluating the transition to renewables in Germany confirms the high esteem accorded to the institute's research.

Research activities at ZEW have a European focus, and the institute has been involved in numerous research projects funded by the 7th Framework Programme for Research and Technological Development of the European Union. ZEW maintains extensive networks within the European Research Area and beyond. Many researchers from European and non-European countries, particularly from the United States and China, benefit from ZEW's unique infrastructure during their sojourns as visiting researchers in Mannheim.

ZEW's international research programme "Strengthening Efficiency and Competitiveness in the European Knowledge Economies" (SEEK) is an outstanding example of scientific excellence in the areas of innovation and sustainability. This programme addresses key factors of innovation and smart growth like Green IT, transport and mobility, and energy economics. The State of Baden-Württemberg is funding the SEEK programme with 1.5 million euros per year.

In February 2013, ZEW's long-standing president, Professor Wolfgang Franz, retired. Winfried Kretschmann, Minister-President of Baden-Württemberg, honoured him with the German Federal Cross of Merit in recognition of his lifelong commitment to research, teaching, and economic policy advice. Under Franz's aegis ZEW became one of the leading economic research institutes in Germany and Europe.

ZEW's new president, Professor Clemens Fuest, is a distinguished member of the academic community and an experienced policy advisor. He is an expert on taxation topics and fiscal policy whose voice is heard. Under his direction, the institute will continue its successful development as a think tank for Europe.

The basis of ZEW's remarkable success in 2012 was the dedication and motivation of the institute's staff. Therefore, very great words of gratitude and best wishes go to all staff members of ZEW.



Theresia Bauer MdL
Minister of Science, Research and the Arts of Baden-Württemberg;
Chairwoman of the ZEW Supervisory Board

LETTER FROM KARL ULRICH MAYER, PRESIDENT OF THE LEIBNIZ ASSOCIATION



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The Centre for European Economic Research (ZEW) in Mannheim has been a member of the Leibniz Association's "Section B: Economics, Social Sciences, Regional Infrastructure Research" since 2004. In its 2009 evaluation of ZEW, the Senate of the Leibniz Association acknowledged the institute as "an extraordinarily successful and seminal establishment for empirical economic research" and recommended its inclusion in the joint federal and state funding programme.

ZEW's research activities have an international focus. The institute maintains a growing network within the European Research Area and beyond. ZEW research projects address a broad spectrum of topics, from education economics and innovation policy to sustainable economic growth and ICT markets, thereby creating many opportunities for interdisciplinary cooperation.

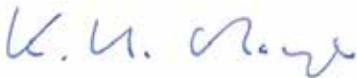
In keeping with the Leibniz Association's mission, the Centre for European Economic Research offers decision-makers in the areas of politics, business, and administration science-based advice. ZEW researchers publish studies and reports on behalf of public authorities, serve as experts in hearings before courts and parliaments, sit in advisory boards, and participate in public debates. Excellent research and policy advice are closely connected. At ZEW, economic policy advice is based on rigorous empirical research, and it is not the task of a specialised team of professional advisors, but the responsibility of each researcher. Scientific findings are at the heart of the advising process in order to ensure the quality of ZEW's activities in this field.

ZEW's long-standing president Prof. Dr. Dr. h.c. mult. Wolfgang Franz, who retired in February 2013, has been a dedicated expert for many years. His commitment as a member and chair of the German Council of Economic Experts is an outstanding example of science as a service to society. Under the direction of Prof. Dr. Clemens Fuest, ZEW's new president, economic policy advice and the establishment of international networks will continue to be important objectives of the institute. Clemens Fuest's experience as an Oxford professor contributes to ZEW's European ambition.

In 2012, ZEW and the School of Law and Economics of the University of Mannheim launched the Leibniz ScienceCampus “Mannheim Centre for Competition and Innovation” (MaCCI), a joint initiative of the participating research institutions, the Leibniz Association, and the State of Baden-Württemberg. MaCCI initiates research projects at the intersection of law and competition economics, contributes to doctoral education, and strengthens the regional network of researchers in this area. The Leibniz Association funds and supports ScienceCampuses to foster cooperation between researchers from universities and non-university research institutions, and to promote interdisciplinary projects.

ZEW has been an active and valuable member of the Leibniz Association, as demonstrated by the institute’s applications for funding granted under the “Joint Initiative for Research and Innovation” programme and by the participation of ZEW researchers and service staff in several Leibniz working groups.

I would like to thank all scientific and non-scientific staff for their contributions to the success of ZEW. We are particularly proud that the Centre for European Economic Research is a member of the Leibniz Association.



Prof. Dr. Karl Ulrich Mayer
President of the Leibniz Association

LETTER FROM THE BOARD OF DIRECTORS



Prof. Dr. Clemens Fuest
President

Thomas Kohl
Director of Business and Administration

2012 started with news about the change of presidency at ZEW: in late January came the announcement that a seamless transition in ZEW's board of directors would be achieved. This was much welcomed by management, employees, partners, and clients. In a retirement ceremony attended by 360 invited guests, long-standing president Professor Wolfgang Franz left office and passed the baton to Professor Clemens Fuest on February 28, 2013. Additional important milestones in 2012 were the launch of the Mannheim Centre for Competition and Innovation (MaCCI), an ambitious joint project of ZEW and the University of Mannheim with funding from Baden-Württemberg and the Leibniz Association, as well as the establishment of the new ZEW Research Group "Competition and Regulation" – both proof of ZEW's efforts to strengthen its research expertise in fields highly relevant to economic policy. In 2013 ZEW will intensify research cooperation with the University of Mannheim in the area of tax policy and international taxation. Moreover, ZEW will increasingly address research topics of international relevance such as international distribution and redistribution of wealth, income, and labour.

In 2012 ZEW carried out a robust expansion of its research network, acquiring new projects and contributing its expertise in economic policy advice. Examples of European activities include participation in the EU's Seventh Framework Programme, numerous collaborative projects with partners from EU member states, and events with participants from the European Commission and other European institutions in Brussels. Outside Europe, ZEW strengthened contacts with institutions in the United States and China. ZEW welcomed visiting scholars and conference participants as well as delegations from universities, research institutes, and governments. A special highlight in the international line-up for 2012 was the second SEEK conference, titled "The Green Growth Challenge", held on March 9th and 10th at ZEW. Drawing more than 200 participants, it included prominent speakers from the worlds of politics, academia, and business, among whom were Klaus Töpfer, the former Federal Minister for the Environment; Franz Untersteller, the Minister for Environment, Climate and Energy in Baden-Württemberg; Richard G. Newell, of Duke University; Robert N. Stavins, of Harvard University; George Müller, the CEO of MVV Energie AG; Peter Terwiesch, the CEO of ABB AG; and Fritz Vahrenholt, the CEO of RWE Innogy GmbH.

ZEW's scientific excellence can be measured by its output in 2012. Its eight research units organised over 40 scientific conferences and workshops and completed 255 projects. ZEW researchers published 88 articles in peer-reviewed journals and presented more than 350 lectures in Germany and abroad. In addition, research unit head Holger Bonin accepted a Chair (yet another ZEW researcher to get the honour); four ZEW post-docs received professorships at universities and colleges; and 14 students completed their doctorates (the second highest number since ZEW was founded). The merit of ZEW research can also be seen in the successful acquisition of third-party funding, whose total volume in 2012 increased to over 10 million euros. Among the major clients were German ministries, foreign governments, and the European Commission (whose share of funding increased significantly). ZEW was also awarded project contracts from the German Research Foundation as well as from an assortment of associations, foundations, and private companies.

In 2012 ZEW continued to cultivate its unique array of services for research infrastructure and knowledge transfer, from print and online media to event management and employee education. The tireless engagement of service staff no doubt played a crucial role in ZEW's growth in 2012. Another factor was the Sponsors' Association for Science and Practice, which once again provided valuable support to ZEW. Thanks to the association's funding, ZEW invited a host of prominent speakers from politics and society, including Jens Weidmann, the president of Deutsche Bundesbank, and Notker Wolf, Abbot Primate of the Benedictine Confederation.

As of 31 December 2012, ZEW employed 182 people, of whom 41 per cent were female and 119 belonged to research staff. We would like to thank each and every staff member for their hard work, without which we could not have become the successful institute we are today. We also wish to thank the State of Baden-Württemberg, the German federal government, and our private donors for their financial and intellectual support; as well as the members of the Supervisory Board, the Scientific Advisory Council, and our research associates for helping us achieve our current position. Finally, we want to thank our clients inside and outside Europe for the trust they have placed in us.

The achievements of 2012 have furnished an excellent foundation for ZEW and its new management to excel in all endeavours in 2013.



Prof. Dr. Clemens Fuest
President



Thomas Kohl
Director of Business and Administration

ABOUT US

- ▶ THE INSTITUTE
- ▶ THE RESEARCH UNITS

ZEW IN BRIEF

The Centre for European Economic Research (ZEW) in Mannheim was founded in 1991 and is a member of the Leibniz Association. Headed by ZEW President Prof. Clemens Fuest and Thomas Kohl, Director of Business and Administration, ZEW currently employs a staff of 180 in five Research Departments, three Research Groups, and three Service Departments. ZEW is one of Germany's leading economic research institutes and enjoys a strong reputation throughout Europe.

Mission and Research Objectives

ZEW pursues four key objectives:

- To conduct research of highest quality
- To provide scientifically grounded economic policy advice
- To train up-and-coming economists
- To inform the professional and lay public

These objectives are closely interconnected and can only be accomplished as a whole. The quality of the institute's policy advice is based on rigorous research, and academic excellence depends on the continuous training of our staff. Staying in close contact with the professional and the lay public enables us to keep our research and advising activities up to date. These guidelines ensure that our work is keeping pace with the economic challenges of our time.

Research Mission

ZEW's guiding mission is to study the "optimal performance of markets and institutions in Europe". The research conducted at ZEW helps to elucidate how the political and institutional environment of market activities should be best organised to promote a sustainable and prosperous development of Europe's knowledge-based national economies.

The core research activities pursued at ZEW are based on this mission:

- The integration of the common European financial market
- Sustainable and efficient strategies for international climate policy
- Goal-directed national and European tax policy against the backdrop of increased factor mobility
- Safeguarding employment and income in times of demographic change
- Innovation in the context of global competition
- The efficient use of information and communication technologies
- Financial stress and macroeconomic development
- Cartel law and competition policy institutions

From a methodological perspective, the institute's research profile is shaped by theory-based approaches to empirical economic research. A key feature of research conducted at ZEW is the combination of macro- and microeconomic methods. Furthermore, ZEW welcomes interdisciplinary approaches and cooperation.

Networking with Universities

ZEW cooperates closely with a number of universities in Germany, Europe and worldwide. The centrepiece of ZEW's university network is long-term cooperation with universities in the Rhine-Neckar Metropolitan Region: the University of Mannheim participates in the staffing of research unit heads at ZEW, particularly by sending faculty members to appointment committees. Contractual agreements with the Universities of Mannheim and Heidelberg facilitate the shared use of resources within doctoral programmes.

ZEW promotes talented scientists by cooperating with various German and international universities within the framework of doctoral programmes. In particular, the institute collaborates with universities within the scope of projects funded by research foundations and institutions. ZEW is involved in one research group, in two priority programmes and in one Collaborative Research Centre of the German Research Foundation (DFG).

ZEW is highly networked to universities through individuals. The institute benefits from close cooperation with some 50 research associates, usually professors from German and international universities, who play an important part in the work of the research units. The ZEW Visiting Researchers Programme and the Short-Term Exchange Programme promote scholarly exchange by bringing international academics to the institute for extended or short-term sojourns.

The institute's successful work is reflected not least in appointments of ZEW researchers to professorships or assistant professorships at universities. In 2012, ZEW researchers were appointed to the Universities of Hohenheim, Kassel, Marburg, Rotterdam, and to RWTH Aachen University. In the recent past, ZEW scholars were appointed to the University of Mannheim, the University of Heidelberg, the Frankfurt School of Finance & Management, the WHU Otto Beisheim School of Management, and to Steinbeis University in Berlin.

Outstanding Characteristics

Although ZEW applies university level standards in its research, the institute's work is clearly distinct from the economic research conducted at universities. ZEW has broader goals than university faculties of economics, and more weight is placed on policy advice and knowledge transfer beyond the confines of a professional academic public. ZEW is the only economic research institute in Germany offering a comprehensive seminar programme for the training of specialised and managerial staff.

The size of ZEW and the broad spectrum of topics studied by our research units enable us to complete major economic policy advising projects. ZEW's infrastructure and resources make it possible to develop and maintain complex analytical models, such as the European Tax Analyzer or the PACE computable general equilibrium model. Furthermore, we are able to undertake long-term surveys and to build up extensive databases. Data collections such as the ZEW Financial Market Test and the Mannheim Innovation Panel can only be developed and maintained through ZEW's broad resource basis.

The close linkage between policy advice and economic research at ZEW is unique among the German economic research institutes.

ZEW has also attained a special status due to its fields of study and research objectives. ZEW is the only German economic research institute engaged in the comprehensive study of the following research topics:

- International financial markets
- European research and innovation policy
- International comparison of corporate taxation
- Employment and income in times of demographic change
- Macroeconomic analysis of environmentally relevant policies
- ICT use of employees and companies
- Analysis of short- and long-term macroeconomic relationships
- Mergers, competition and regulation

RESEARCH PERFORMANCE

Research excellence at ZEW has various dimensions:

- The publication of research findings in scientific journals
- National and international networks with research institutions
- On-going knowledge exchange through conferences, workshops and research visits
- Development and maintenance of unique databases

Publications

The publication of research findings in international refereed journals is a core indicator of a research institution's scientific performance. Successful publishing is hence a major objective of ZEW. The institute has one of the best publication performances of German economic research institutes: between 2010 and 2012, a total of 238 papers written by ZEW researchers were accepted for publication in journals with a peer review system. In 2012, more than every second ZEW researcher published a paper in a reviewed journal. At ZEW, it is not only a few leaders in the field, but a large number of researchers who contribute to the institute's publication success.

Cooperation Partners

Close cooperation with research institutions in Germany and abroad is a decisive factor for success. ZEW collaborates with universities, research institutes, and organisations. The decentralised network is organised according to the specific needs of ZEW researchers.

Great value is placed upon the international scope of the network and on its interdisciplinary nature. ZEW has distinguished international partners, primarily in Europe, and increasingly cooperates with partners in North America and Asia. One example is the cooperation with the University of Chicago. Noble Prize Laureate Prof. James J. Heckman gives young ZEW researchers the opportunity to work in his research team at the University of Chicago in the field of educational economics. In Asia, collaboration with Chinese universities and research institutes is becoming more and more important.

Scientific Conferences

Another important means of establishing cooperative ties is scientific exchange through conferences and workshops. The institute annually hosts a number of conferences in order to ensure targeted knowledge transfer. ZEW researchers regularly present their work at national and international conferences.

In 2012, ZEW's research units staged some 40 scientific conferences and workshops attracting several hundred German and international researchers. ZEW organises established conferences on environmental economics, financial markets, innovation, competition, and taxation topics. ZEW also organises workshops and conferences on special research topics.

ZEW has a strong presence at national and international conferences. In 2012, ZEW researchers gave more than 350 presentations at scientific conferences in Germany and abroad. In particular participation at international conferences has increased over the past few years. The institute offers seminars to teach effective presentation techniques and rules of conduct in order to ensure a strong performance of its staff at international events.

International conferences are also an opportunity to promote ZEW as an institution and employer. The institute is getting in touch with up-and-coming research talents at important meetings, e.g. at the ASSA meetings in the United States.

Development and Maintenance of Research Data

In most cases, individual-level data form the basis for the empirical research work at ZEW. Thanks to its well-developed infrastructure, ZEW is able to collect, process, and analyse data according to recognised scientific standards. One example of data collected at ZEW is the KfW/ZEW Start-up Panel. This recurring survey provides a unique database regarding start-up activities and business dynamics in Germany. Initiated in 2008, the panel is configured to continue through 2013.

Whenever possible, ZEW processes datasets to make them available for scientific purposes through its Research Data Centre (ZEW-FDZ). The Research Data Centre was opened at the end of 2012 and offers external users access to several databases (according to data security guidelines). ZEW's realisation of a Research Data Centre is yet another contribution to the development of scientific infrastructure.

The institute participates in the on-going development of large data sets assembled in collaboration with other research institutions:

- ZEW collaborates with the Socio-Economic Panel Study (SOEP) in Berlin to measure the development of cognitive and non-cognitive skills over the individual life cycle.
- ZEW develops questionnaire items for the National Educational Panel Study (NEPS) for research in the areas of secondary and tertiary education

Existing microdata sets are also analysed for use in economic research. In close collaboration with the research data centre of the Institute for Employment Research (IAB) in Nuremberg, ZEW has undertaken pioneering work to investigate linked business and employee data. In the course of research conducted at ZEW to evaluate the effects of Germany's 2005 welfare reforms (also referred to as "Hartz reforms"), administrative data maintained by the German Federal Employment Agency were systematically utilised for research purposes for the very first time.

QUALIFICATION OF STAFF

Training talented researchers is a main objective of ZEW. The ZEW qualification programme consists of internal and external training seminars. Core instruments for qualifying researchers include:

- Participation in doctoral programmes and courses at universities
- ZEW qualification programme “Econometrics”
- Paid release from project responsibilities to complete individual research and publications
- Seminars on scientific methods and project management
- Mentoring by heads of units, senior researchers, and research associates

Two Pathways Leading to a Doctorate

Graduate education is the core element of promoting young academics at ZEW. Two-thirds of ZEW’s scientific staff are working on their dissertations. At the same time they benefit from training courses at the institute and become familiar with the day-to-day practice of academic research.

On average, the young academics at ZEW obtain their doctoral degree in less than five years. Afterwards, the major part of them pursue their career in the private sector, in associations or government institutions. Many of the postdoctoral researchers habilitate and are appointed to professorships at universities. ZEW currently employs some 80 doctoral candidates. In order to meet the requirements of the wide range of research topics and personalities, doctoral education is carried out in an open framework.

University graduates who begin their research career at ZEW can attain their doctoral degree by following one of two pathways:

- By working as a full-time staff member in a ZEW research unit
- By participating in the ZEW Doctoral Studies Network (ZEW DocNet)

ZEW’s in-house doctoral programme involves writing a dissertation based on collaborative research projects. In tandem with experienced economists and the heads of the ZEW research units, young researchers develop a topic for their dissertation. Once doctoral students are matched with a research topic, a dissertation supervisor is sought out at a German or a foreign university. The further promotion procedure depends on the regulations for doctoral studies at the selected university. Candidates also have the opportunity to enrol in doctoral courses at the cooperating university.

ZEW DocNet is the second pathway for doctoral candidates. This international network links ZEW with graduate programmes offered by German and foreign universities. This collaboration also helps the institute to attract up-and-coming researchers.

Graduates who choose the ZEW DocNet pathway apply for admission to the graduate school of a participating university. Doctoral candidates complete the entire doctoral programme at their universities. After the course phase they pursue project work either in part or entirely at ZEW. Currently, 14 doctoral candidates participate in the ZEW DocNet. In the coming years, DocNet will take on even greater importance in ZEW’s doctoral education programme.

Qualification Programme

A qualification programme helps ZEW staff to advance their careers. This programme, financed through a special qualification fund, rewards superior scientific work, for example by offering sabbaticals. Research sabbaticals free up time for researchers to pursue work independent from their project responsibilities at ZEW. Activities financed by the qualification fund include:

- Temporary release from project responsibilities at ZEW to complete one's own research
- Extended research stays at German and foreign research institutions
- Participation in seminars, doctoral colloquia, and summer schools

All research staff have access to ZEW's internal professional development programmes, including courses in econometrics, IT, foreign languages, communication, and management skills.

ZEW also familiarises students with empirical research methods. It employs a large number of interns and research assistants from the local universities. The institute offers them a first opportunity to apply theoretical and methodological knowledge acquired at university in research practice. Students often develop bachelor and master thesis projects from their work and are supervised by ZEW researchers.

Professional Training of Service Staff

ZEW takes the professional development of its service staff just as seriously as the training of researchers, thereby ensuring the institute's excellent research conditions. ZEW offers numerous opportunities for continuing education. Additionally, ZEW offers a continuing education programme in English language skills.

As an employer, ZEW is maintaining up to nine vocational training positions. Personal advisors mentor apprentices during their technical or administrative training periods.

ECONOMIC POLICY ADVICE

One of ZEW's guiding objectives is to provide economic policy advice based on rigorous economic research. The institute advises public actors from the worlds of politics and administration at the European as well as federal and state levels. ZEW also advises associations and international organisations.

Areas of Policy Advice

ZEW's science-based economic policy advising encompasses:

- Scientific studies and reports on behalf of public authorities
- Participation of our researchers in parliamentary hearings, formal consultations with parliaments, ministries, and the EU Commission; memberships in advisory boards
- Informal consultations with representatives of the EU Commission, ministers and staff of various administrations, as well as members of parliament
- Participation in public debates on economic policy via media contributions

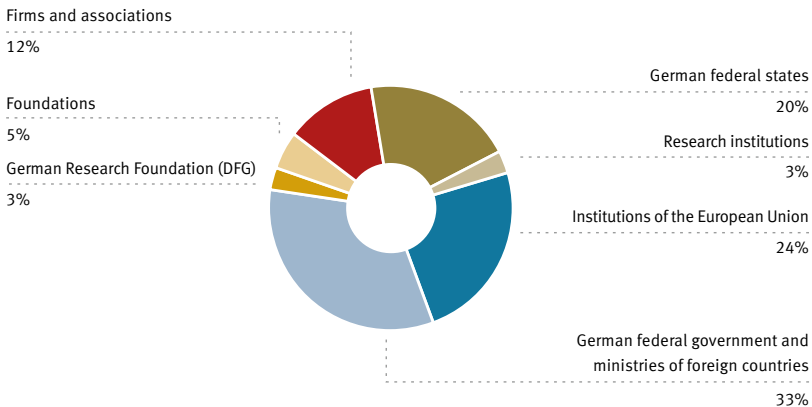
Science-Based Economic Policy Advising

ZEW's credo is to provide policy advice based on solid scientific data and according to scientific standards. It is therefore not one specialised team of "policy advisors" which is in charge of policy advising, but each researcher at ZEW. Policy advice and the publication of scientific work go hand in hand – policy advice and research are complementary, and scientific findings are at the heart of the advising process. This concept ensures the scientific quality of ZEW's activities in this field.

Clients

In 2012, the institutes secured third-party funding worth 10.1 million euros. German ministries and ministries from other countries account for 53 per cent of the total volume and are thus ZEW's most important clients. With a share of 24 per cent, the importance of the European Commission has grown visibly. Companies and associations have a share of about twelve per cent. Foundations and scientific institutions contribute eight per cent and the German Research Foundation (DFG) contributes five per cent of third-party funding.

SOURCES OF THIRD-PARTY FUNDING IN 2012



Quality Management

Almost all research projects financed by third-parties are acquired in project competitions, so external assessment is provided from the very beginning. Project findings are often presented at scientific workshops or published on servers with open access.

Experienced researchers direct and support ZEW's project teams. ZEW's senior researchers often take on responsibility for leading a project. Project managers, research unit heads, the ex-

ecutive directors, and research associates are actively involved in practical research work and ensure the research quality.

KNOWLEDGE TRANSFER

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. With its expertise, the institute contributes to the debate on economic topics on the national and international level. Primary target groups include researchers, the media, specialised employees and managers in the private sector, ministries and associations, as well as citizens with an interest in economic policy and research.

ZEW uses various communication channels for target group-oriented knowledge transfer:

- ZEW Discussion Papers and book series
- Information leaflets and research reports
- Seminars, conferences and symposia
- Scientific conferences and public events
- Print and electronic media

ZEW Publications

The core medium for the dissemination of research results is the ZEW Discussion Papers series. ZEW Discussion Papers undergo a thorough review process prior to publication. They are available free-of-charge via the ZEW website or scientific databases. ZEW Discussion Papers have been attracting wide attention in the economics community, as demonstrated by their high download numbers at RePEc.

ZEW also publishes its research work in two established book series: ZEW Economic Studies (publisher: Physica) are released in English, while ZEW Wirtschaftsanalysen (publisher: Nomos) are published in German.

The institute's periodic publications and research reports have a wide readership, including academics and students from many disciplines, specialists and managers, as well as citizens with a general interest in economic policy. These publications include selected findings from ZEW's research and policy advising activities, and provide information concerning conferences, meetings, and ZEW training seminars. In order to promote ZEW's international perception, general information about the institute is available in German, English and Chinese.

Electronic Information Resources

ZEW passes information to the media and the general public via a comprehensive range of regularly updated online resources. Visitors can read current news items and download a large number of research papers from the institute's website. Some 5,600 subscribers receive ZEW's monthly newsletter in German or in English, providing information on new research findings, publications, events, and staff news.

The institute's special web platforms are composed by topic and present an arrangement of interconnected projects, publications, reports, press releases, and contact information, thereby facilitating research on a specific issue. Web platforms are available for ZEW's core research topics, e.g. climate policy, education, innovation, and business taxation.

Efficient Communication

We respond to the numerous incoming inquiries every day. We also approach a number of actors – particularly in the media – in order to obtain a multiplier effect for the institute's expertise. We publish some 100 press releases and host twelve press conferences every year to inform the media about the institute's research findings and to participate in economic policy debates.

Professionally designed publications based on ZEW's corporate design support the recognition value of ZEW's informational media. Our target groups benefit from a reader-friendly layout as well as informative graphics and illustrations in ZEW media.

Events

Numerous ZEW events provide a platform for networking with research institutions, firms, government agencies, and organisations. They are also an opportunity to keep in touch with the general public. ZEW's research units organise some 40 scientific conferences and workshops every year. Apart from scientific conferences, ZEW organises events with renowned speakers for stakeholders of the institute and larger target groups. These events include:

- First-Hand Information on Economic Policy (Wirtschaftspolitik aus erster Hand)
- Mannheim Economic and Monetary Talks (Mannheimer Wirtschafts- und Währungsgespräche)
- ZEW Economic Forum (ZEW Wirtschaftsforum)

Knowledge Transfer and Qualification Programmes

Every year, ZEW's unique range of seminars attracts several hundred participants from the fields of science, administration and business. The institute offers a professional training curriculum with a sound scientific basis and a practical orientation. ZEW researchers and experts from organisations and enterprises collaborate closely to ensure that the seminars meet highest quality standards.

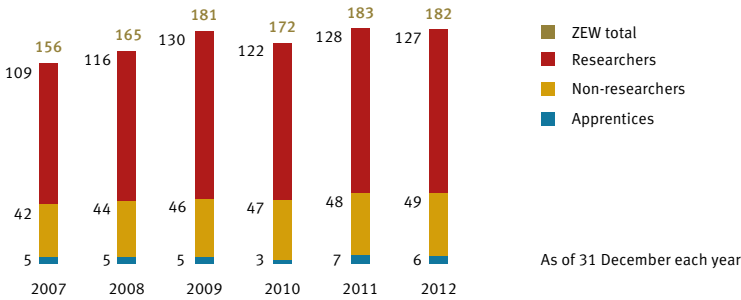
The Service Department "Knowledge Transfer & Qualification Programmes" offers different programme formats: Annually, some 30 expert seminars are offered to participants from the worlds of academia, business, and politics. Alongside the strong demand for seminars on macro- and microeconomic topics (e.g. financial market analysis and transfer prices), ZEW's methodological expertise (e.g. in econometrics) is also highly sought after. Additionally, ZEW organises the annual Mannheim Corporate Tax Day where tax experts meet business representatives. Each year ZEW organises some 30 seminars for firms and public institutions that wish to offer their employees individualised professional training. Seminars provide in-house professional qualification opportunities for ZEW employees, for instance presentation and moderation techniques in German and English.

STAFF REPORT AND FINANCIAL STATEMENT

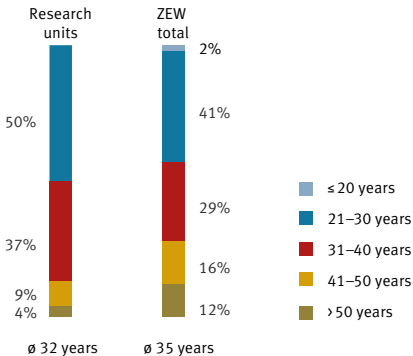
Staff Report

At the end of 2012, ZEW had a staff of 182 (2011: 183). 127 staff members were engaged in research (2011: 128). In the period covered by this report, 17 members of the research staff departed from ZEW after successfully completing their activities and/or degrees (2011: 21). More than half of the departing staff members accepted jobs at universities and public institutions; nearly one-third moved to companies and associations. Figure 1 displays ZEW's staff development over time. The majority of staff members in ZEW's research units are scholars with degrees in economics, especially in macroeconomics. The average age of ZEW researchers is 32, reflecting ZEW's wealth of talent and ambition. Across all units, the average staff age is 35 (see Figure 2). In accordance with the ZEW human resources policy, the vast majority (86 per cent) of research staff have fixed-term contracts. The total share of fixed-term labour arrangements, including the Service Departments, is about two-thirds. The fluctuation of staff members is also illustrated by the high number of 99 employees who have been with ZEW for less than five years (see Figure 3).

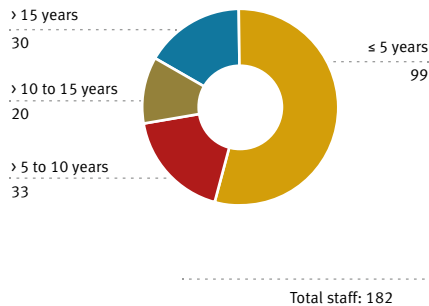
1] STAFF DEVELOPMENT



2] AGE DISTRIBUTION



3] DURATION OF EMPLOYMENT

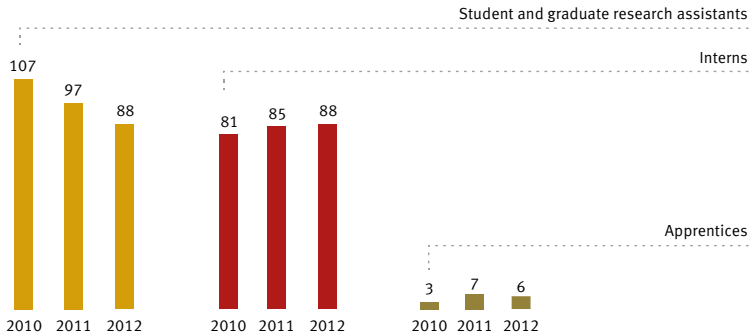


ZEW hires interns as well as student and graduate research assistants, thereby contributing to the qualification and professional education of young academics. Interns receive significant support and mentorship prior to embarking on a career. In the course of 2012, 88 interns (2011: 85) were engaged at ZEW (see Figure 4). Student and graduate research assistants primarily come from the Universities of Mannheim and Heidelberg as well as other universities in the Rhine-Neckar Metropolitan Region. At ZEW, they have an opportunity to obtain professional work experience in a research or service unit. In some cases, promising young academics stay connected to ZEW after they completed their university degrees. In December 2012, 88 students (2011: 97) were engaged as assistants at ZEW.

A large number of research associates from German and foreign universities support ZEW's research. Research associates play an important role in educating and mentoring research staff, in the development and maintenance of research areas at ZEW, as well as in networking with national and international partners. Over the period covered by this report, numerous visiting researchers, both from Germany and abroad, were engaged for varying lengths of time in ZEW research work. The goal of these sojourns is collaboration on projects, as well as exchange of knowledge and experience.

The ZEW Visiting Researchers Programme (VRP) was established to strengthen and expand international networking. VRP addresses researchers seeking an extended stay at ZEW. True to ZEW's internationalisation strategy, a second networking initiative titled Short Term Exchange Programme (STEP) addresses well-established, experienced researchers who want to stay at ZEW for a short-term sojourn. The ZEW Doctoral Studies Network supports joint activities with university doctoral programmes. It offers doctoral candidates a chance to obtain rigorous training in applied empirical economics, as well as to collaborate with ZEW's experienced research staff on projects with national and international partners. The participation of external partners in research projects is another form of international collaboration at ZEW. Within the scope of such activities, ZEW expanded its international ties and established new contacts worldwide.

4] STAFF IN TRAINING



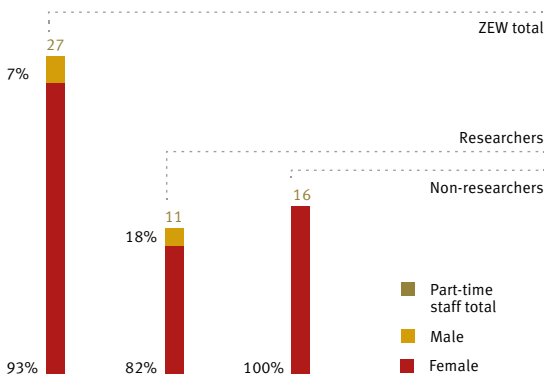
ZEW is devoted to scientific work and economic policy advice on a high-quality international standard. In order to meet these demands, ZEW actively supports the on-going professional development of its staff. Under ZEW's qualification programme, staff members benefit from sabbaticals temporarily releasing them from project work. Researchers use sabbaticals to complete their dissertation or habilitation thesis, or for sojourns at foreign institutions. In 2012, as in the previous year, 14 researchers completed their doctoral theses, many of them *summa cum laude*. As an employer, ZEW is particularly attractive for young researchers due to the flexible organisation of working hours. A total of 27 staff members (2011: 33) at year's end were taking advantage of a personalised part-time schedule. This represents 15 per cent (2011: 18 per cent) of the institute's overall staff (see Figure 5). Flexible working hours contribute to a healthy balance between professional and family life. During the reporting period, the share of female researchers was 31 per cent.

Across all of ZEW, 41 per cent of staff is female (see Figure 6). Quite remarkably, the share of female senior researchers is 70 per cent.

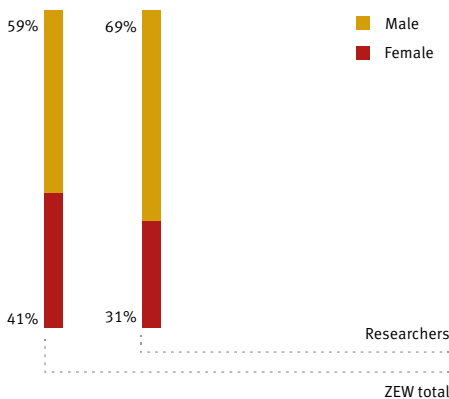
Financial Statement

The balance sheet for ZEW's endowment, finances, and revenues shows a positive picture for the fiscal year of 2012. This is particularly notable as conditions were rather difficult due to the economic and financial crisis in Europe in conjunction with increased national and international competition for third-party research funding. The share of funding that came from third parties (including other revenues) was increased to 50 per cent in 2012 (2011: 47 per cent). The volume of third-party funded projects in the years 2012 and following currently amounts to 15.0 million euros (see Figure 7). This illustrates that the scientific work at ZEW has been very well recognised. Since its foundation in 1991, ZEW has attracted third-party funding worth more than 107 million euros and has thus exceeded the magic mark of 100 million euros in 2012.

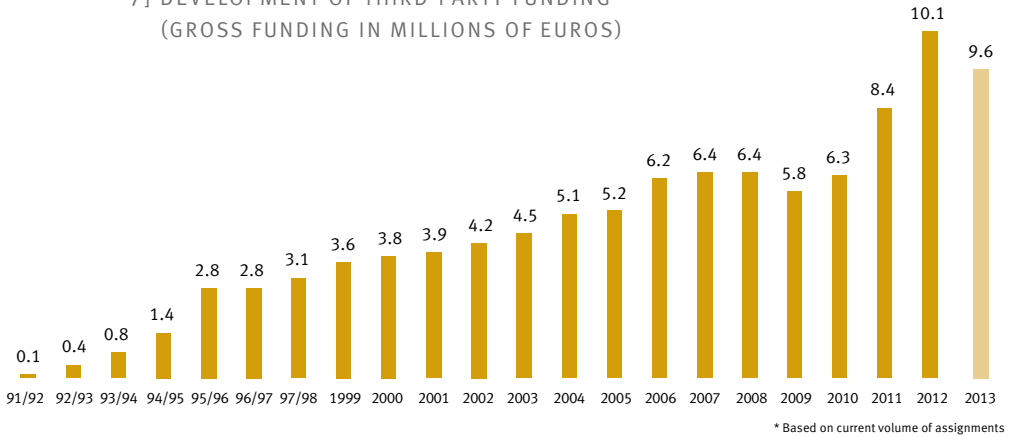
5] PART-TIME STAFF



6] STAFF BY GENDER



7] DEVELOPMENT OF THIRD-PARTY FUNDING
(GROSS FUNDING IN MILLIONS OF EUROS)



ZEW’s financial charter, which foresees the receipt of general funding for the institute in fixed amounts, enables the designation of surplus revenues from increases in third-party funding as “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 2012, the institute thus registered an annual surplus of 0.81 million euros and a net income of 1.36 million euros (2011: 1.66 million euros, see Figure 8). The Board of Directors’ recommendation to the Supervisory Board is to place this surplus into “appropriated reserves” and to use it predominantly for the qualification of staff members, the initiation of new research projects, and the further internationalisation of ZEW. As shown in Figure 9, the current total capital of 16.73 million euros clearly exceeds the 2011 number of 15.23 million euros. This increase is particularly reflected in the fixed assets and the balance of bank deposits. Regarding the sources of funds, the higher volume of total capital is predominantly reflected in the shareholder’s equity due to (appropriated) reserves. 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 2012: Total revenues were notably higher in 2012 (20.50 million euros) than in 2011 (18.25 million euros). This is primarily attributable to a higher gross turnover of 10.12 million euros, compared to 8.40 million in 2011. The net turnover (gross turnover minus third-party services) was 6.97 million euros, exceeding the 2011 figure of 6.57 million euros. Total expenses were 19.69 million euros, higher than last year’s figure of 17.38 million euros. This considerable increase is primarily attributable to a rise in “other operating expenditures” from 4.75 to 6.47 million euros.

8] ZEW PROFIT-AND-LOSS-STATEMENT*

(in K euros)	2008	2009	2010	2011	2012*
Institutional funds	7,430	7,600	7,766	8,503	9,189
Joint Initiative for Research and Innovation Funding	566	848	794	646	487
Third-party funds (turnover, inventory changes, subsidies)	6,422	5,819	6,281	8,397	10,116
Other business revenues, financial profit	761	528	440	359	357
Income from the reversal of the special item for contributions to fixed assets	303	295	320	341	353
Total revenues	15,482	15,090	15,601	18,246	20,502
Staff expenditures	8,695	9,753	9,992	10,300	10,637
Third-party services	1,573	1,069	990	1,344	1,302
Other operating expenditures	4,202	4,287	4,081	4,750	6,471
Asset write-offs	303	295	320	341	353
Allocation to special items for contributions to fixed assets	198	240	468	629	919
Other taxes	3	5	29	12	11
Total expenses	14,974	15,649	15,880	17,376	19,693
Profit/loss for the financial year	508	-559	-279	870	809
Withdrawals from appropriated reserves	806	1,161	967	790	554
Net income	1,314	602	688	1,660	1,363

* Preliminary figures

9] ZEW BALANCE SHEET AS OF 31 DECEMBER 2012*

	31-12-2011 in K euros	31-12-2012 in K euros		31-12-2011 in K euros	31-12-2012 in K euros
ASSETS			LIABILITIES AND EQUITY		
Intangible assets	58	142	Share capital	26	26
Real estate	2,286	2,949	Appropriated reserves	1,968	3,074
Equipment	671	695	Other reserves	2,169	2,170
Downpayments made and construction in progress	241	35	Net income	1,660	1,363
Fixed assets	3,256	3,821	Shareholder's equity	5,823	6,633
Stocks	4,288	4,108	Untaxed reserves	1,061	1,626
Receivables	724	911	Reserves	2,575	2,760
Investments/ cash at banks	6,871	7,782	Advances received	4,079	4,185
Current assets	11,883	12,801	Liabilities	1,689	1,521
Prepaid expenses	88	103	Outside capital	8,343	8,466
Total	15,227	16,725	Total	15,227	16,725

* Preliminary figures

DATABASES

ZEW established a Research Data Centre (ZEW-Forschungsdatenzentrum ZEW-FDZ) at the end of 2012 where researchers can access data sets prepared as Scientific-Use-Files or Education-Use-Files. Moreover, researchers from universities or non-university scientific institutions have access to further sets of de-identified data on ZEW-FDZ premises. Usage of ZEW data is restricted to non-commercial research and subject to data protection directives. The following databases are accessible:

- **Mannheim Innovation Panel (MIP)**

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

Contact: Dr. Sandra Gottschalk (gottschalk@zew.de)

- **Mannheim Enterprise Panel (MEP)**

Firm-level data for the analysis of business start-ups, growth, and survival with data from some 7.6 million active firms or firms that have existed in the past 20 years in Germany. Only aggregate data on industry and regional level are passed on.

Contact: Daniel Höwer (hoeuer@zew.de)

- **Business Survey in the Information Economy**

Quarterly survey of firms from the ICT sector, the media sector, and of ICT-intensive service providers on their current economic situation and the expected development

Contact: Daniel Erdsiek (erdsiek@zew.de)

- **ZEW Financial Market Surveys**

The monthly surveys of experts provide expectation data on international and national financial market trends as well as macroeconomic developments. The surveys are conducted in Germany, Switzerland, Austria, Central and Eastern Europe, and Turkey.

Contact: Prof. Dr. Michael Schröder (schroeder@zew.de)

- **KfW/ZEW CO2-Panel**

Survey of companies, experts, and researchers regarding the current situation and expected developments on the EU emissions trading market. The survey is conducted in cooperation with the KfW Banking Group.

Contact: Prof. Dr. Andreas Löschel (loeschel@zew.de)

RESEARCH PROGRAMME

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

The research programme “Strengthening Efficiency and Competitiveness in the European Knowledge Economies” is designed to intensify collaboration between ZEW economists and renowned external researchers. The state government of Baden-Württemberg is financing this landmark project at the Centre for European Economic Research in Mannheim to strengthen top level economic research. The five-year research programme aims to boost ZEW’s position in the international research landscape, even beyond the project period. This aim is being pursued through international research projects, scientific publications and conferences, economic policy advice, and the improvement of research infrastructure.

Within the framework of the programme, economists employ empirical methods to address the efficiency and competitiveness of the European knowledge-based economies. Furthermore, the aim of this programme is to offer decision makers in the areas of politics and business strategies to overcome the great challenges the European economies are facing. These challenges were listed in the “Europe 2020” strategy of the European Commission. Projects within the SEEK framework contribute to the goals of “Europe 2020” from a scientific point of view.

Researchers investigate how the formation of human capital, IT adoption, incentives for research and development as well as the management of diminishing natural resources should be best organised to strengthen the capacity for innovation and productivity and to safeguard jobs and prosperity. SEEK projects address factors that are fundamental to the competitiveness of knowledge-based economies, such as well-functioning financial institutions and capital markets as well as an efficient public sector. Another objective of SEEK is to improve our understanding of the mechanisms that support economic stability in an increasingly interconnected world economy. The programme comprises processes of knowledge generation, the diffusion and adoption of knowledge, the efficient use of knowledge and the effects on economic key factors, e.g. framework conditions necessary to strengthen knowledge-based economies.

SEEK was launched in the beginning of August 2010. 6,000 international researchers were invited to take part in the first two competitive calls for proposals for SEEK research projects in close cooperation with ZEW researchers. This competitive procedure ensures highest scientific quality. A scientific board consisting of distinguished international researchers evaluated 23 international cooperation projects. After a thorough review process, nine projects were approved (research teams given as of the date of approval):

Product Innovation under Uncertainty – The Effect of Dynamic Resource Allocation

Research Team:

- Dr. Christian Rammer, ZEW, Research Department of Industrial Economics and International Management
- Assistant Prof. Ronald Klingebiel, Warwick Business School, The University of Warwick, UK
- Associate Prof. Ron Adner, Tuck School of Business at Dartmouth (Tuck), US



The Research Use Exemption from Patent Infringement – Boon or Bane?

Research Team:

- Dr. Diana Heger, ZEW, Research Department of Industrial Economics and International Management
- Prof. Paul Jensen, The University of Melbourne, Melbourne Institute of Applied Economic and Social Research; Intellectual Property Research Institute of Australia, AU
- Prof. Elizabeth Webster, The University of Melbourne, Melbourne Institute of Applied Economic and Social Research; Intellectual Property Research Institute of Australia, AU
- Dr. Alexandra Zaby, University of Tübingen, Department of Applied Economic Theory

Interaction Between Innovation and Firm Dynamics and Its Impact on Industry Structure and Economic Growth

Research Team:

- Dr. Bettina Peters, ZEW, Research Department of Industrial Economics and International Management
- Prof. Eric J. Bartelsman, VU University Amsterdam, Department of Economics, NL
- Assistant Prof. Sabien Dobbelaere, VU University Amsterdam, Department of Economics, NL

Patent Litigation in Europe

Research Team:

- Dr. Katrin Cremers, ZEW, Research Department of Industrial Economics and International Management
- Dr. Georg Licht, ZEW, Research Department of Industrial Economics and International Management
- Prof. Dietmar Harhoff, INNO-tec – Institute for Innovation Research, Technology Management and Entrepreneurship, Ludwig Maximilian University of Munich
- Prof. Georg von Graevenitz, INNO-tec – Institute for Innovation Research, Technology Management and Entrepreneurship, Ludwig Maximilian University of Munich
- Assistant Prof. Christian Helmers, Carlos III University of Madrid, Department of Economics, ES
- Dr. Robert Pitkethly, Oxford Intellectual Property Research Centre, UK
- Tony Clayton, Intellectual Property Office, UK
- Associate Prof. Cédric Schneider, Copenhagen Business School, DK
- Nicolas van Zeebroeck, PhD, Centre Emile Bernheim, Solvay Brussels School of Economics and Management, BE

How Do Banks Screen Innovative Firms?

Research Team:

- Daniel Höwer, ZEW, Research Department of Industrial Economics and International Management
- Prof. Hans Degryse, Tilburg University, European Banking Center, NL
- Associate Prof. Martin Brown, Tilburg University, European Banking Center, NL
- Assistant Prof. María Fabiana Penas, Tilburg University, European Banking Center, NL

Taxation and Corporate Innovation

Research Team:

- PD Dr. Friedrich Heinemann, ZEW, Research Department of Corporate Taxation and Public Finance
- Christof Ernst, ZEW, Research Department of Corporate Taxation and Public Finance
- Dr. Alexander Kalb, ZEW, Research Department of Corporate Taxation and Public Finance
- Florian Misch, PhD, ZEW, Research Department of Corporate Taxation and Public Finance
- Prof. Clemens Fuest, University of Oxford, Saïd Business School, UK
- Associate Prof. Richard Kneller, University of Nottingham, School of Economics, UK
- Nadine Riedel, PhD, University of Oxford, Saïd Business School, UK
- Prof. Christoph Spengel, University of Mannheim, Department of Business Administration and International Taxation

Firm Behaviour Over the Product Life Cycle. Entry, Exit and Pricing Strategies on Online Price-Comparison Sites

Research Team:

- Michael Kummer, ZEW, Research Group of Information and Communication Technologies
- Associate Prof. Franz Hackl, University of Linz, Department of Economics, AT
- Prof. Rudolf Winter-Ebmer, University of Linz, Department of Economics, AT
- Prof. DI Christine Zulehner, University of Linz, Department of Economics, AT

Anticipated Technology Shocks in the European Economies

Research Team:

- Dr. Atılım Seymen, ZEW, Research Group of Growth and Business Cycles
- Prof. Paul Beaudry, University of British Columbia, Department of Economics, CA
- Prof. Franck Portier, University Toulouse I, Toulouse School of Economics, FR

Induced Climate-Related Innovations, Crowding out, and Their Impacts on Competitiveness

Research Team:

- Prof. Reinhilde Veugelers, Catholic University Leuven, Department of Managerial Economics, Strategy and Innovation, BE
- Annelies Wastyn, Catholic University Leuven, Department of Managerial Economics, Strategy and Innovation, BE
- Hanna Hottenrott, PhD, Catholic University Leuven, Centre for R&D Monitoring, BE; ZEW, Research Department of Industrial Economics and International Management
- Prof. Andreas Löschel, ZEW, Research Department of Environmental and Resource Economics, Environmental Management
- Dr. Georg Licht, ZEW, Research Department of Industrial Economics and International Management
- Sascha Rexhäuser, ZEW, Research Department of Environmental and Resource Economics, Environmental Management

More information on the 2010 SEEK projects and contact persons can be found on the SEEK website: <http://seek.zew.eu>. All research projects of the first call for proposals have been completed successfully.

During the second call for proposals in 2011, the scientific board thoroughly evaluated 25 projects and selected eight projects for promotion (research teams given as of the date of approval):

Fostering Competitiveness of the European Car Industry

Research Team:

- Dr. Nina Leheyda, ZEW, Research Department of Industrial Economics and International Management
- Prof. Frank Verboven, Catholic University Leuven, Department of Economics, BE
- Laura Grigolon, Catholic University Leuven, Department of Economics, BE

Estimating the Macroeconomic Elasticity of Substitution between Clean and Dirty Production

Research Team:

- Dr. Marianne Saam, ZEW, Research Group of Information and Communication Technologies
- Chris Papageorgiou, PhD, International Monetary Fund (IMF), Washington D.C., US

The Division of Tasks, Offshoring and the Competitiveness of Europe's Knowledge Economy

Research Team:

- Prof. Irene Bertschek, ZEW, Research Group of Information and Communication Technologies
- Dr. Jan Hogrefe, ZEW, Research Group of Growth and Business Cycles
- Dr. Marianne Saam, ZEW, Research Group of Information and Communication Technologies
- Bas ter Weel, PhD, CPB Netherlands Bureau for Economic Policy Analysis, Department of Labour Market and Welfare State; Maastricht University, Department of Economics, NL
- Prof. Lex Borghans, Maastricht University, Department of Economics; Research Centre for Education and the Labour Market (ROA), NL
- Semih Akçomak, CPB Netherlands Bureau for Economic Policy Analysis, Department of International Economics; Maastricht University, Network Social Innovation (NSI), NL

The Effect of (Relative) Wages and Human Capital on Fertility Choices: Lessons From East Germany's Fertility Decline after Unification

Research Team:

- Jun.-Prof. Melanie Arntz, ZEW, Research Department of Labour Markets, Human Resources and Social Policy
- Jun.-Prof. Christina Gathmann, University of Mannheim, Public Finance and Economic Policy Group; ZEW, Research Department of Labour Markets, Human Resources and Social Policy
- Prof. Martha Bailey, University of Michigan, Department of Economics, US

Incentives and Creativity – Enhancing Innovation in Europe’s Knowledge Economies

Research Team:

- Dr. Susanne Neckermann, ZEW, Research Department of Labour Markets, Human Resources and Social Policy
- Christiane Bradler, ZEW, Research Department of Labour Markets, Human Resources and Social Policy
- Prof. Bruno S. Frey, University of Zurich, Department of Economics; CREMA – Center for Research in Economics, Management and the Arts, CH
- Prof. Michael Gibbs, University of Chicago Booth School of Business, Department of Economics, US

Diffusion of Climate-Friendly Technologies – The Role of Intellectual Property Rights, Human Capital and Environmental Policy

Research Team:

- Prof. Andreas Löschel, ZEW, Research Department of Environmental and Resource Economics, Environmental Management
- Sebastian Voigt, ZEW, Research Department of Environmental and Resource Economics, Environmental Management
- Valentina Bosetti, PhD, Fondazione Eni Enrico Mattei (FEEM), IT
- Enrica De Cian, PhD, Fondazione Eni Enrico Mattei (FEEM), IT
- Elena Verdolini, PhD, Fondazione Eni Enrico Mattei (FEEM), IT

How Philanthropy Affects Corporate Competitiveness in Europe

Research Team:

- Dr. Sarah Borgloh, ZEW, Research Department of Corporate Taxation and Public Finance
- Manuel Halter, ZEW, Research Department of Corporate Taxation and Public Finance
- Dr. Diana Heger, ZEW, Research Department of Industrial Economics and International Management
- Associate Prof. René Bekkers, VU University Amsterdam, Department of Philanthropic Studies, NL
- Dr. Dick de Gilder, VU University Amsterdam, Department of Organization Sciences, NL
- Prof. Theo Schuyt, VU University Amsterdam, Department of Philanthropic Studies, NL

Private Funding of Higher Education – Human Capital as an Asset Class

Research Team:

- Dr. Grit Mühler, ZEW, Research Department of Labour Markets, Human Resources and Social Policy
- Dr. Peter Westerheide, ZEW, Research Department of International Finance and Financial Management
- Tim-Alexander Kröncke, ZEW, Research Department of International Finance and Financial Management

- Prof. Michael Schröder, ZEW, Research Department of International Finance and Financial Management
- Dr. Maresa Sprietsma, ZEW, Research Department of Labour Markets, Human Resources and Social Policy
- Prof. Hessel Oosterbeek, University of Amsterdam, Amsterdam School of Economics, NL
- Assistant Prof. Miguel Palacios, Vanderbilt University, Owen Graduate School of Management, US

More information on the 2011 SEEK projects and contact persons can be found on the SEEK website: <http://seek.zew.eu>. The research projects of the second call for proposals have all been completed, except for the project “The Effect of (Relative) Wages and Human Capital on Fertility Choices: Lessons from East Germany’s Fertility Decline after Unification”.

The results of these projects have been published as discussion papers and contributions in academic journals, and have been presented at workshops. The ZEW researchers benefit from the intensive scientific exchange and expanded their research networks thanks to their collaboration with renowned international experts. Furthermore, ZEW created a new instrument for disseminating research results beyond the circle of experts: “SEEK policy briefs” present the results of the SEEK projects in a brief and intelligible way to national and international decision-makers. Thanks to ZEW’s excellent research and economic policy advice, the institute’s position in the international research landscape is being boosted.

After an evaluation by the scientific board, the third competitive call for proposals for research projects was completed in spring 2012. Seven out of 23 proposals were approved (research teams given as of the date of approval):

Taxation and Corporate Innovation

Research Team:

- Dr. Jost Henrich Heckemeyer, ZEW, Research Department of Corporate Taxation and Public Finance
- Katharina Richter, ZEW, Research Department of Corporate Taxation and Public Finance
- Prof. Christoph Spengel, University of Mannheim, Department of Business Administration and International Taxation; ZEW, Research Department of Corporate Taxation and Public Finance
- Dr. Christina Elschner, University of Mannheim, Department of Business Administration and International Taxation; ZEW, Research Department of Corporate Taxation and Public Finance
- Prof. Johannes Voget, University of Mannheim, Department of ABWL, Finance and Accounting
- Elisabeth Köpping, University of Mannheim, Department of Business Administration and International Taxation
- Prof. Harry Huizinga, PhD, Tilburg University, Department of Economics, NL
- Helen Miller, Institute for Fiscal Studies, London, UK

Financial Stress and Economic Dynamics: Asymmetries Within and Across Euro Area Countries

Research Team:

- Dr. Marcus Kappler, ZEW, Research Group of Growth and Business Cycles
- Frauke Schleer, ZEW, Research Group of Growth and Business Cycles
- Prof. Willi Semmler, The New School University, Comparative Empirical Macroeconomics, New York City, US
- Prof. DPoLSc. Timo Teräsvirta, Aarhus University, Department of Economics and Business, DK
- Prof. Peter Winker, Justus Liebig University Gießen, Department of Statistics and Econometrics; ZEW, Research Department of International Finance and Financial Management

Effects of Knowledge and Learning in Technology Adoption: Social Networks, Adoption, and Persistence in the Video Game Market

Research Team:

- Dr. Benjamin Engelstätter, ZEW, Research Group of Information and Communication Technologies
- Dr. Jörg Claussen, Copenhagen Business School, DK
- Prof. Michael R. Ward, University of Texas at Arlington, Department of Economics, US

Corporate Social Responsibility and Credit Costs

Research Team:

- Prof. Michael Schröder, ZEW, Research Department of International Finance and Financial Management
- Dr. Andreas Hoepner, University of St. Andrews, School of Management, Centre for Responsible Banking & Financing, UK
- Dr. Ioannis Oikonomou, University of Reading, Henley Business School, ICMA Centre, UK
- Prof. Dr. L.J.R. Bert Scholtens, University of Groningen, Department of Economics, Econometrics and Finance, NL

Does the German Government Distribute Direct R&D Subsidies Efficiently?

Research Team:

- Dr. Bettina Peters, ZEW, Research Department of Industrial Economics and International Management
- Thorsten Doherr, ZEW, Research Department of Industrial Economics and International Management
- Prof. Dirk Czarnitzki, Catholic University Leuven, Department of Managerial Economics, Strategy and Innovation, BE
- Prof. Otto Toivanen, PhD, Catholic University Leuven, Department of Managerial Economics, Strategy and Innovation, BE
- Mila Beyer, Catholic University Leuven, Department of Managerial Economics, Strategy and Innovation, BE

Competitiveness Impacts in the World with Uneven Carbon Constraints: Examining the Implications of the EU Emissions Trading Scheme on Energy-Intensive Industries

Research Team:

- Dr. Victoria Alexeeva-Talebi, ZEW, Research Department of Environmental and Resource Economics, Environmental Management
- Prof. Andreas Löschel, ZEW, Research Department of Environmental and Resource Economics, Environmental Management
- Carolyn Fischer, PhD, Resources for the Future (RFF), Washington D.C., US
- Richard D. Morgenstern, PhD, Resources for the Future (RFF), Washington D.C., US

Why Do Governments Fund Applied Research Institutions? – Theory and Empirical Evidence from the German Fraunhofer Institutes

Research Team:

- Dr. Georg Licht, ZEW, Research Department of Industrial Economics and International Management
- Dr. Birgit Aschhoff, ZEW, Research Department of Industrial Economics and International Management
- Associate Professor Diego A. Comin, PhD, Harvard Business School, US

More information on the SEEK projects can be found on the SEEK website: <http://seek.zew.eu>.

Eight SEEK projects are currently being conducted. First results are expected to be available in the course of 2013. The fourth call for proposals was completed in November 2012; the projects were launched after an evaluation by the scientific board in April 2013.

After the huge success of the 2011 kick-off conference, ZEW hosted the second SEEK conference “The Green Growth Challenge” in Mannheim on April 9 and 10, 2012, and attracted some 200 international guests from the fields of academia, politics and business. The conference focused on the key challenges the European national economies are facing on their path to environmentally friendly and sustainable growth. Once again, ZEW had the privilege to welcome high-profile speakers: the conference was opened by Franz Untersteller, Minister of the Environment, Climate Protection and the Energy Sector of Baden-Württemberg. Keynote speaker of the first day of conference was Prof. Klaus Töpfer, Executive Director of the Institute for Advanced Sustainability Studies (IASS) and former Executive Director of the United Nations Environment Programme (UNEP). The key lecture was followed by a top-class panel discussion chaired by Prof. Andreas Löschel, head of the Research Department “Environmental and Resource Economics, Environmental Management“ at ZEW. Dr. Georg Zachmann, energy expert of Brussels-based think tank Bruegel, Prof. Fritz Vahrenholt, Chairman of RWE Innogy GmbH, Dr. Peter Terwiesch, Chairman of ABB AG, and Dr. Georg Müller, Chairman of MVV Energie AG, discussed ways to promote sustainable growth protecting our resources and the climate, and, at the same time, increasing innovation and competitiveness in Europe. The second day of the SEEK conference was devoted to scientific discourse. The focus was on the different aspects of and linkages between innovation, technological change and green growth. Some



Some 200 international guests and high-profile representatives from the areas of politics, academia and business attended the SEEK conference “The Green Growth Challenge” in March 2012: ZEW President Wolfgang Franz, former federal minister Klaus Töpfer, ZEW research unit head Andreas Löschel, and Georg Müller, Chairman of MVV Energie AG (from left to right)

40 lectures and two keynote presentations from Prof. Robert N. Stavins (Harvard University) and Prof. Richard G. Newell (Duke University), two renowned researchers in this area, addressed these topics.

The third SEEK conference “Engines for More and Better Jobs in Europe” is taking place at ZEW in Mannheim on April 25-26, 2013.

In addition to the wide-ranging scientific agenda of the SEEK research programme, measures are taken to sustainably improve the competitiveness and cooperation skills of ZEW. For instance, additional space for international workshops and conferences, as well as office space for visiting researchers was rented and refurbished to ensure efficient scientific research.

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LEIBNIZ SCIENCECAMPUS

MANNHEIM CENTRE FOR COMPETITION AND INNOVATION (MaCCI)

In cooperation with the School of Law and Economics at the University of Mannheim, ZEW established the Leibniz ScienceCampus “Mannheim Centre for Competition and Innovation” (MaCCI)



by January 1, 2012. A ScienceCampus is a joint initiative of at least one institution within the Leibniz Association, at least one university, as well as the federal state where the university is located, and may also include the federal level. The objective of initiatives like MaCCI is to promote excellent research on the basis of a mutually beneficial regional partnership between Leibniz institutions and universities, which is in principle open to third parties. The duration of a Leibniz ScienceCampus is usually seven years or longer, depending on the research topic.

Objective

The MaCCI ScienceCampus aims to initiate research projects at the intersection of law and economics in the areas of competition policy, regulation, and innovation. The focus is on basic, applied-theoretical, and empirical research as well as on research in comparative law and the economic analysis of law. In this way, the MaCCI ScienceCampus strengthens the position of legal research in Germany and Europe as well as the impact of economics on legal practice. It offers opportunities for young researchers, and, over the long term, improves the position of participating institutions on the international market for scientific talent.

Background and Motivation

The three main research areas of the MaCCI ScienceCampus – competition policy, regulation, and innovation – have undergone significant changes in recent years, both in Germany and at the European level. At the same time, there is increasing demand for evidence-based policies. This, in turn, calls for analyses that are tailored to each individual policy activity. Such analyses should no longer be conducted in isolated individual policy areas, but should take into account direct and indirect policy impacts as well as reciprocal effects between policy areas. As a result, an economic assessment of policy measures is becoming more difficult, and complex institutional frameworks also have to be considered in theoretical and empirical analyses. This is precisely where legal analysis becomes relevant: It is crucial to comparatively assess the effects of previously implemented regulations upon competition and innovation. It is just as important to identify problems and develop yardsticks based upon economic insights which are consistent with a view to regulatory policy, and which also ensure legal certainty and are viable for practical implementation.

In the field of competition policy, the “More Economic Approach” represents a variant of evidence-based policy. While previous approaches were based on the conditions for sufficiently free market processes and focused on determining criteria for evaluation, the “More Economic

Approach” is ultimately interested in positive or negative market results. This approach was adopted in the reform of the European Competition Law in 2004 (Regulation 1/2003), which led to a reform of the German Competition Law (7th Amendment to the Act against Restraints of Competition). Key elements of the reform were the shift from the former ex-ante notification system to an ex-post legal exemption system, the “decentralisation” of competition law enforcement, and the



The Leibniz Association, the State of Baden-Württemberg, ZEW, as well as the University of Mannheim were represented at the opening conference of the Leibniz ScienceCampus on March 29, 2012. Christiane Neumann (Secretary General, Leibniz Association), Simone Schwanitz (Ministry of Science, Research and the Arts of Baden-Württemberg, second and third from left) and the MaCCI Board of Directors: Georg Licht (ZEW), Martin Peitz, Heike Schweitzer (both University of Mannheim), Thomas Kohl (ZEW).

strengthening of private antitrust enforcement. Yet a comprehensive answer to the question which role private enforcement should play in antitrust law, and how this role can be developed procedurally, has not been found. Against this background, interdisciplinary discussion is essential to develop solutions that ensure legal security and provide an economic analysis in step with actual practice, especially of complicated individual cases. Comparative analysis and economic evaluation of the decentralised application of competition law by EU member state authorities, which has been neglected so far, is of great practical interest as well.

Focal Points

The MaCCI ScienceCampus thus focuses on problems requiring cooperation between economists and legal scholars. Specific topics addressed by MaCCI are questions regarding standardization from the viewpoints of competition law, competition economics, as well as innovation pol-

icy. Furthermore, core topics analysed by MaCCI include competition in the health sector, public and private enforcement of competition law, enforcement and strategic use of intellectual property rights (such as patents and trademarks), and the development of competition in the telecommunications and energy markets. All these topics allow for a consistent realisation of MaCCI's two guiding principles: interdisciplinary and application-oriented research. The MaCCI ScienceCampus aims at achieving academically outstanding as well as practically applicable results.

Contributions to Doctoral Education and Teaching

The ScienceCampus aims to contribute to doctoral education and master student education on three levels:

- Within the framework of the Mannheim Competition Policy Forum, presentations on current problems regarding competition law cases (e.g. antitrust law decisions) are organised on a fortnightly basis. In particular representatives of authorities, competition consultants or scientific experts are being invited.
- Doctoral candidates are involved in MaCCI projects and some are integrated in the Centre for Doctoral Studies in Economics (CDSE) at the University of Mannheim.
- The ScienceCampus aims to extend a European network for doctoral education at the intersection between "Law and Economics", with the already existing "Competition Law and Economics European Network" (CLEEN) serving as centrepiece of the network. About 20 doctoral candidates are currently 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 2012, MaCCI was involved in the organisation of about 15 scientific events. More than 30 researchers with expertise in various aspects of competition economics and law form the core of the regional MaCCI network. MaCCI is supported by a scientific advisory board consisting of renowned international researchers from the areas of competition, regulation and innovation.

» CASTING A BRIGHT SPOTLIGHT ON THE SHADOW BANKING SYSTEM.



Prof. Dr. Michael Schröder
Head of the Research Department
International Finance and
Financial Management



Photo: © Jeff Chenier/Blackphoto

banks

RESEARCH DEPARTMENT INTERNATIONAL FINANCE AND FINANCIAL MANAGEMENT



Prof. Dr. Michael Schröder
Head of Department



Dr. Gunnar Lang
Deputy

RESEARCH AREAS

- **Financial Intermediation**
Contact: Dr. Mariela Borell, Dr. Gunnar Lang
- **Expectation Formation**
Contact: Prof. Dr. Michael Schröder
- **Asset Markets**
Contact: Prof. Dr. Michael Schröder

MISSION STATEMENT

This Research Department is devoted to the analysis of international financial markets as well as to providing economic policy advice related to financial markets. It is the largest economic research department of its kind in Germany and sees itself as one of the most important providers of financial market research in the realms of academia, politics, and business.

The optimal performance of international and in particular European financial markets is a guiding topic in the department's research. Important aspects of study include the regulation of capital market players and the relationships between financial markets and the real economy.



RESEARCH AREA: FINANCIAL INTERMEDIATION

- Banks
- Venture Capital and Private Equity
- Mutual Funds

Economists in this research area analyse banks, venture capital (VC) and private equity (PE) firms, and investment funds. The optimal function of international financial markets is a guiding topic of research. In this regard, researchers have been exploring a variety of issues that have emerged from the recent financial market crises, including risk behaviour on the part of banks and fund managers, the systemic risks that may result from such behaviour, as well as the regulation of various financial market actors.

A major focus in analysing banks has been to investigate the effects of regulation and governance on decision-making and risk behaviour in the banking sector and to examine the consequences of such behaviour for systemic stability. For example, researchers study how current trends in the development of regulations for the financial industry (e.g. Basel III, dividing commercial from investment banking, Solvency II, etc.) may affect the ways that banks grant credit. Another research topic concerns the further development and improvement of regulation.

A project completed at the end of 2012 investigated whether a dual banking system in which commercial and investment banking activities are kept separate would help to increase the stability of financial markets. The project was undertaken on behalf of the German Association of Public Sector Banks (VÖB). A key finding is that the recommendations for a dual banking system (including the proposals put forth in October by the “Liikanen” Group) would only contribute in

a minor way to systemic stability. A better way to reduce systemic risks would be to further increase regulatory equity-ratio requirements, especially buffer capital (e.g. capital conservation and countercyclical capital buffers). Regulators might also consider implementing additional regulatory equity requirements in proportion to the share of a firm's investment banking operations or involvement with hedge funds. Before introducing further regulatory measures, it would also be prudent to await the effects of commitments already undertaken for additional financial market regulation.

A new study undertaken on behalf of the German Federal Ministry of Finance (BMF) is examining the role of financial investors in commodities markets. The project will analyse how and to what extent financial investors are active in commodity futures markets. It will seek ways to improve the transparency of such activities, and, on this basis, assess the need for new regulatory measures.

The research area continued its work on a series of projects sponsored by the Sustainable Business Institute (SBI) concerning the pricing of CO₂ certificates and the existence of potential interdependencies between energy and CO₂ certificate prices. In these studies, economists were especially interested in determining whether change in the price of emissions rights flowed into electricity prices symmetrically or asymmetrically. The study showed that there was, in fact, a temporary asymmetry whereby price increases for emissions certificates had a significantly greater impact on the price of electricity than equivalent price decreases. However, this pricing asymmetry ceased to exist approximately at the same time that the Federal Cartel Office began to confront German electricity companies about costs for emissions rights.

As part of the work in the sub-area "Venture Capital and Private Equity", researchers are investigating different aspects of corporate financing and investor strategy. The studies focused on the influence that VC and PE investors exercise over their portfolio companies. The issue of regulating VC and PE investors as well as hedge funds is of particular relevance from an economic policy perspective.

Investment funds represent another important group of financial intermediaries. As shareholders, investment companies can exert considerable influence on business policy in the companies that are part of their fund portfolios. The focus of this research sub-area is in the analysis of decision-making behaviour on the part of investment companies and fund managers as well as the problems in corporate governance that may result from their decisions. In conjunction with the analysis of VC and PE funds by economists in the sub-area "Venture Capital and Private Equity", the research on the behaviour of fund managers and institutional investors thus incorporates the areas of open-ended funds and investment fund companies.

A subject that has become a focus of interest for this research area in recent years concerns sustainable capital investments. These are defined as investments selected according to ethical, societal, and ecological criteria. The central question for researchers is how information used to estimate companies' sustainability impacts investment decisions on the part of investors and financial intermediaries (e.g. for the granting of credit, and in determining equity capital costs). While earlier studies focused on the performance of funds and indices, in the near future, researchers will turn their attention to the effects of sustainability ratings on companies' borrowing costs.

The SEEK project “Corporate Social Responsibility and Credit Costs” is using data from an international panel of firms to examine the relationship between sustainable corporate practices and the costs of borrowing. In a further step, economists will specifically investigate the credit costs for companies that are active in industries with a negative social connotation, such as the production of alcohol or tobacco, atomic energy, the weapons industry, and gambling. For these companies, it is presumed that long-term corporate risks (process costs, pollution, image problems, etc.) may lead to higher costs for credit due to the inclusion of a risk premium.

RESEARCH AREA: EXPECTATION FORMATION

- Expectation Formation and Behavioural Finance
- Expectations and the Real Economy
- Expectations and Asset Prices

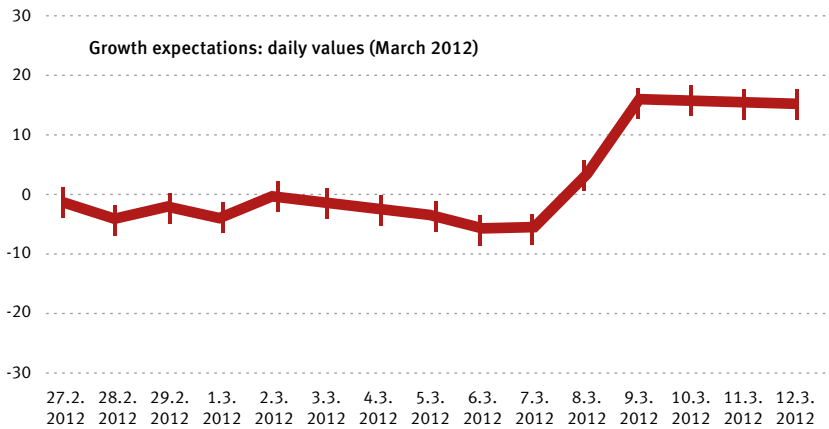
Economists in this research area investigate selected issues related to price formation for securities. They focus in particular on the overall processes of price formation for securities and their relationships to financial market prices and the real economy.

When studying financial-market variables, a special emphasis is placed on the process by which expectations are formed, as well as on the substance of these expectations. Empirical investigations undertaken by ZEW researchers seek to illuminate correlations between expectation formation and financial market prices. For example, researchers explore whether and to what extent there are distortions in expectations that lead to corresponding distortions in price formation. Similarly, ZEW economists conduct empirical analyses on the ways that individual expectations may differ, and about the possible connections between the intermittent occurrence of homogeneity between individual expectations and herd behaviour in financial markets.

Research work undertaken by the economists in the area may be classified into three distinct topics. The first of these topics is the analysis of the forms and dynamics of financial market expectations. Here, consideration is given to exogenous factors, such as the availability of new macroeconomic data, as well as factors discussed in the context of behavioural finance. The second focus is on the information content of expectations in relation to future changes in the macroeconomy and financial markets. This includes examination of the forecast quality of individual expectations and the determination of reasons for especially good or bad forecasts. Finally, the third topical focus is on the reciprocal interactions between securities prices and expectations. The database of information obtained by the “ZEW Financial Market Test”, a monthly survey conducted since the end of 1991, is a key foundation for empirical research in the Research Department. More than 300 financial experts participate in the survey and provide primary expectation data on the future development of the stock market, interest rates, and currency prices as well as on important macroeconomic factors such as changes in economic growth and inflation. This furnishes a very extensive database, which forms an excellent basis for empirical research on expectation formation, and which has attracted increasing attention in the profession-

al world in recent years. The project “ZEW Financial Market Test” will soon be expanded to include a survey for China, in which experts in the Chinese capital market will be queried on a monthly basis regarding their expectations for financial markets and the macroeconomy.

1] EXPECTATIONS FOR ECONOMIC GROWTH IN THE EUROZONE



The figure shows expectations for economic growth for the eurozone over a period of six months. The jump that took place between March 7 and 10 was related to the initial restructuring of Greece’s sovereign debt. On May 8, it became known that 86 per cent of private creditors had agreed to the debt-restructuring plan.

Expectation data from the ZEW Financial Market Test are being used in a number of research projects currently under way. In a project financed by the ZEW Sponsors’ Association for Science and Practice, researchers have developed a model to enable estimation of the variation in aggregate expectations on a day-to-day level based on responses from continuous intraday surveying. Economists have ascertained that the results of forecasts made at the end of a survey period using the day-to-day model are more reliable than forecasts that rely exclusively on data from the most recent monthly survey. Thus, the intraday data has produced a substantial information advantage.

In a quite different context, economists in the research area are studying expectations on international stock and bond markets. The project “Characteristics of Sovereign Debt Restructurings and their Consequences”, being conducted in collaboration with the Research Department “Corporate Taxation and Public Finance”, is examining data covering a period of nearly 100 years to empirically study the historical impact of debt restructuring on the nations that are directly involved and on other nations. Among other issues, the study is seeking to ascertain whether different debt restructuring regimes have led to different effects on capital markets. The findings could help to improve future rules for restructuring sovereign debt.

RESEARCH AREA: ASSET MARKETS

- Wealth Formation and Old-Age Provisions
- Real Estate and Capital Markets
- Analysis of Real Estate Markets

The analysis of financial markets, particularly for real estate financing, is the key subject of study in this research area. Economists in the area are conducting a new research project on behalf of the Federal Institute for Research on Building, Urban Affairs, and Spatial Development (BBSR) to investigate the impacts of the Basel III Accord on real estate financing in Germany. They will closely examine the supply-side structural consequences of the Accord along with its impact on product structure and the real estate financing market. In addition, the study will include an analysis of how insurance industry regulation affects the real estate finance market.

In order to provide an up to date picture of the status and the sentiment of the German market for real-estate finance, the research area launched a new quarterly survey of market participants in 2011, which is used to calculate the German Real Estate Financing Index (DIFI). The survey is being continued in 2013.

In keeping with the research area's integrated approach, researchers perform fundamental analyses of the real estate markets and examine prospects for future market growth. This integrative approach is based on the conviction that a deeper understanding of the real estate market is necessary in order to assess the characteristics of real estate as an investment class and its reciprocal relationship with macroeconomic growth.

In collaboration with the University of Mannheim, the research area conducted its annual survey of the housing market in Baden-Württemberg on behalf of the L-Bank of Baden-Württemberg. In addition to detailing the current situation of the housing market on the demand and supply sides, the 2012 survey included a special chapter on the sustainable supply of residential housing with a particular focus on low-income households in major cities in Baden-Württemberg.

In collaboration with the Cologne Institute for Economic Research (IW) and the International Real Estate Business School (IREBS), and on behalf of the Federal Ministry of Transport, Building, and Urban Development (BMVBS), the German Association for Housing, Urban Development and Spatial Development (DV), and the Society for Real Estate Research (GIF), the research area prepared an expert report on the macroeconomic and social significance of the real estate industry. In continuation of the collaboration between ZEW and IW Cologne that began in 2009, economists in the research area have conducted qualitative and quantitative analyses of the often-underestimated macroeconomic impact of the real estate industry.

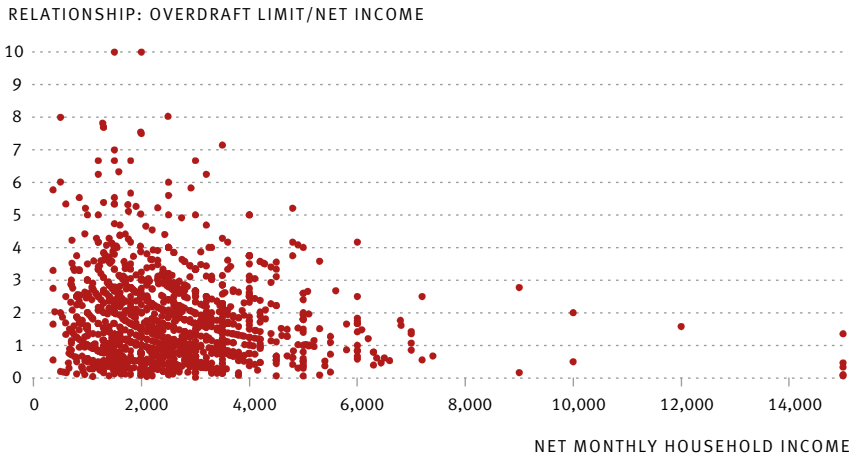
A third key research topic is how private households make investment decisions and plan for retirement, specifically in regard to private pensions that are invested in financial and real estate assets as well as associated institutional conditions. Currently, economists are undertaking a project on behalf of the German Ministry of Finance (BMF) in collaboration with the Research Group "Growth and Business Cycles" and the University of Ulm, titled "Savings and Investments in the Context of Demographic Change".

The research area was collaborating with the Research Department “Labour Markets, Human Resources and Social Policy” on a research project titled “Private Funding of Higher Education – Human Capital as an Asset Class”. The project was financed under the SEEK programme and aimed to analyse the risks of investing in human capital from the point of view of investors. Economists of the two Research Departments examined the impacts of demographic change on the characteristics of human capital-based investment vehicles and empirically investigated the effects of diversification for an investor.

The research area is conducting a project titled “Future Orientation of the Government-Subsidized Capital Formation” on behalf of the Federal Ministry of Economics and Technology (BMWi) to study government support for asset formation in private households in Germany, as structured in the Fifth Capital Accumulation Act (VermBG). The first step in the study is an inventory of asset formation and an evaluation of the design of current instruments. Building on this project module, which is being conducted in collaboration with the Institute for Applied Economic Research (IAW) in Tübingen and the FiFo Institute for Public Economics at the University of Cologne, the next part of the study will aim at developing specific recommendations for the future orientation of asset formation and government support for private investment in Germany.

The aim of the “Study on Interest Paid on Overdrafts and Instalment Credit” jointly conducted by ZEW and the Institute for Financial Services (IFF) on behalf of the German Federal Ministry of Consumer Protection, was to compile reliable data about the adoption and use of overdraft credit (Figure 2). Using data from the SAVE study (Savings and Retirement Planning in Germany) con-

2] AVAILABILITY OF OVERDRAFT CREDIT



The graph shows the relationship between the amount of overdraft credit that is granted and net monthly household income.

ducted by the Munich Center for the Economics of Aging (MEA), a representative panel study of private households, economists in the research area developed analyses that showed which groups of individuals are granted overdraft credit, the amount of credit extension, and how frequently households make use of this option. The findings of the study show that in 2009, nearly 80 per cent of German households had access to overdraft credit. This form of credit is used with particular frequency by the unemployed, single parents, couples with children, and self-employed individuals.

OUTLOOK

In coming years, the regulation of financial markets and reciprocal effects between capital markets and the real economy will be key subjects of research. The findings obtained in this research will help economists to analyse the behaviour of market actors (banks, VC and PE funds, and investors on commodities markets), to analyse systemic risk with agent-based models, and to study the interdependencies between real estate and financial markets, as well as investigate questions concerning the investment decisions of private and institutional investors. Research that has been under way for several years on corporate sustainability and capital markets will be further enhanced by including approaches from the Venture Capital area.

In the study of expectation formation, greater emphasis will be placed on explanatory approaches from the field of behavioural finance, as well as on specialised econometric methods. In addition, the Financial Market Test survey will be expanded to include China.

The Leibniz Network on “Real Estate and Capital Markets” (ReCapNet) that has been established over the past several years will be further developed, and in the autumn of 2013, the fifth International ReCapNet Conference will be held at ZEW.

» USING STRUCTURAL REFORMS TO MASTER EUROPE'S UNEMPLOYMENT CRISIS.



Prof. Dr. Holger Bonin
Head of the Research Department
Labour Markets, Human Resources
and Social Policy





Comunidad de Madrid

OFICINA DE EMPLEO

CONSEJERÍA DE EMPLEO Y MUJER



labour
market

RESEARCH DEPARTMENT LABOUR MARKETS, HUMAN RESOURCES AND SOCIAL POLICY



Prof. Dr. Holger Bonin
Head of Department



Jun.-Prof. Dr. Melanie Arntz
Deputy



PD Dr. Friedhelm Pfeiffer
Deputy

RESEARCH AREAS

- **Employment and Wages**
Contact: Jun.-Prof. Dr. Melanie Arntz, PD Dr. Nicole Gürtzgen
- **Education Economics**
Contact: PD Dr. Friedhelm Pfeiffer, Dr. Maresa Sprietsma
- **Social Welfare Institutions**
Contact: Dr. Holger Stichnoth, Dr. Thomas Walter
- **Personnel Economics**
Contact: Dr. Grit Mühler, Dr. Susanne Steffes

MISSION STATEMENT

The Research Department “Labour Markets, Human Resources and Social Policy“ investigates how to best organise labour market institutions and provide working conditions in firms to achieve high levels of employment and equitable wages in Europe’s knowledge-based economies.

The Research Department approaches labour market issues from a microeconomic perspective. Our expertise lies in the area of micro-econometric methods, particularly in techniques for programme evaluation.

Our unique linked micro-macro simulation model is an advanced tool for the ex-ante evaluation of government labour market interventions. From the perspectives of education economics, we examine the optimal investment in cognitive and non-cognitive skills over the life cycle.

Alongside basic research activities, the Research Department provides scientifically grounded policy advice. Our studies provide economic policy makers with information and recommendations for devising strategies to combat skill shortage and promote the efficiency of labour markets in the face of demographic and technological change.



RESEARCH AREA: EMPLOYMENT AND WAGES

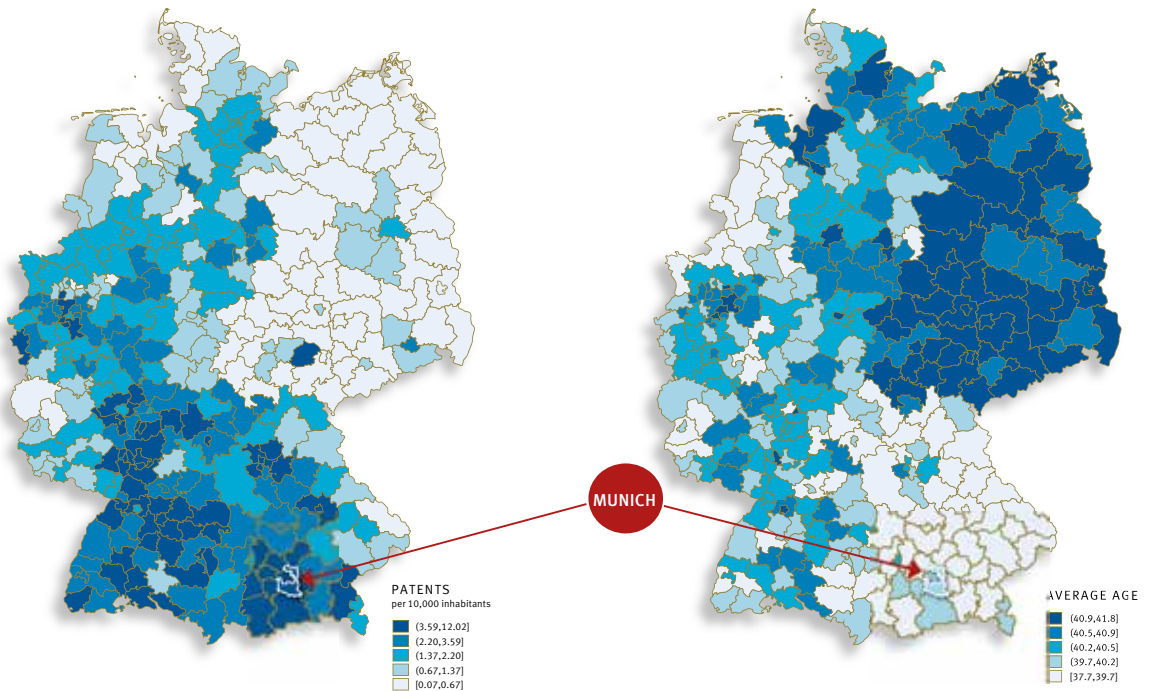
- Wage Formation and Income Inequality
- Employment Dynamics

Economists in this research area study labour market imperfections caused by institutions, rigidities and adjustment frictions. Based on the findings of this research, they develop policy options to improve the functioning of the labour market. The dynamics of individual employment histories is an additional subject of research, particularly the determinants of transitions between education, employment, unemployment, and non-employment. Further areas of study are wage formation, wage dynamics, and income inequality, with an emphasis on wage and employment outcomes in regional, sectoral, skill- and firm-specific labour markets.

In 2012, the research area continued its work on minimum wages in the field of institutional labour market regulation. For instance, researchers analysed how the minimum wage for roofers introduced in 1997 affected employment. They found that the legal minimum wage (€10.80) was received by some 12 per cent of employees in West Germany, but by almost 60 per cent of employees in East Germany. Moreover, in East Germany the introduction of the minimum wage increased the likelihood of being laid off in the roofing sector by 2–3 per cent, but in West Germany it had little effect on employment. Investigators also measured the effect of the minimum wage on other wage groups in the roofing sector. They found that while workers in West Germany saw little change in employment, regardless of their wage, all wage groups in East Germany experienced worse employment opportunities.

An example of the research area's work in regional economics, a project sponsored by the Fritz Thyssen Foundation, analyses the effect of demographic aging on regional innovation. In particular, researchers examined the number of registered patents per 100 employees and the average age of employees for 332 labour markets as shown in Figure 1. The distribution indicates strong East-West and North-South divides. The younger regions in the South had a relatively high number of per capita patent registrations, while the older regions in the East had a relatively low number of patent registrations. Using spatial data analysis, researchers identified strong geographical dependencies and a number of specific geographical clusters. The findings point to the important role played by interregional networks and social interactions. From a dynamic perspective, there is evidence for increasing polarisation between German regions. While Southern areas have been able to expand their productivity lead and find younger workers to replace employees near retirement, the regions in East Germany have found it more and more difficult to attract a young workforce to counterbalance the aging of their populations.

1] REGIONAL DISTRIBUTION OF PATENT ACTIVITY AND AGE STRUCTURE OF GERMAN LABOUR MARKET REGIONS



With 8.51 patents per 10,000 inhabitants, Munich ranks in the top 10 per cent of regions in Germany for innovation (left graph). With an average employee age of 39.8 years, it is also the region with the second-youngest labour population (right graph).

RESEARCH AREA: EDUCATION ECONOMICS

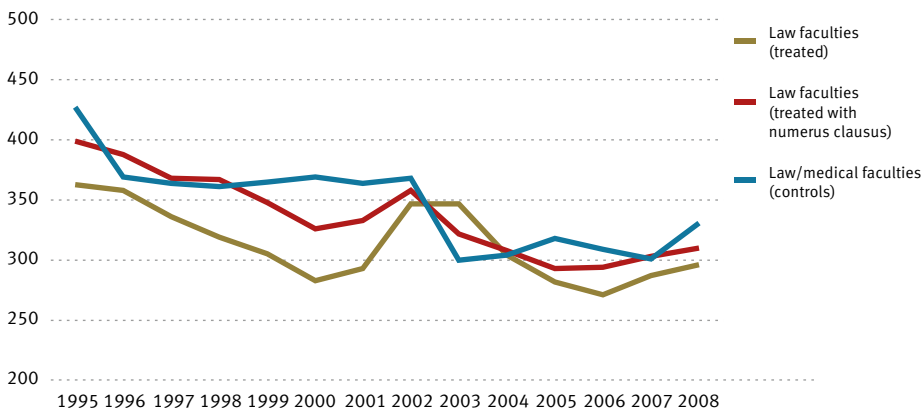
- Formal Education
- Informal Education

Economists in this research area contribute to a better understanding of ways to improve educational processes in families and public institutions to help people realise their full potential on the labour market. Which factors make for effective learning? How beneficial are investments in education over the life cycle? To answer these questions, the area’s researchers conduct longitudinal studies employing individual data. On this basis, they assess the process of learning in schools, in vocational programmes, and at universities, and evaluate educational policies and related institutions.

The research area collects data on the effectiveness of educational institutions by looking at the consequences of reforms in the school and university system. One example is the survey commissioned by the Federal Ministry for Education and Research (BMBF) on the effects, in the wake of the Bologna reforms, of the centralised university admission process on the number of first-year students. Among other things, researchers compared first-year student figures at law schools in North Rhine-Westphalia that use centralised admissions with figures in federal states that use a decentralised procedure (Figure 2).

2] NEW STUDENT ENROLMENT AT LAW FACULTIES BEFORE AND AFTER THE ABOLITION OF THE CENTRAL ASSIGNMENT OF UNIVERSITY SEATS IN 2001

NUMBER OF FIRST-YEAR STUDENTS



Source: ZEW calculations, student statistic

The figure compares the number of first-year university students at faculties affected by the reforms with the number at faculties not affected by the reforms. Immediately after the decentralisation period (2002–2004) the number of first-year university students outside North Rhine-Westphalia increased, though the increase at faculties with restricted admissions was significantly less. This indicates that the removal of local admission restrictions was more important for the increase of first-year students than the decentralisation of admissions.

Life cycle research conducted in this research area focuses on the econometric estimate of various educational benefits. For example, ZEW economists have been examining returns to tertiary education in light of new earning risks associated with a university degree, and have also analysed the chances of university graduates to find employment according to their qualification and skills. Another focus is on educational histories at the juncture between school and career. Last year researchers completed a study on the “dual orientation internship”, a programme in North Rhine-Westphalia to encourage students in the upper secondary classes (Sekundarstufe 2) to pursue university degrees. Using a control group design with multiple classroom surveys, researchers were able to identify the impact of the programme on the desire of students to pursue university-level education.

Staff from the research area used a similar design to study local projects whose goal is to improve educational opportunities of disadvantaged youth. In 2012 researchers have begun to create a database for analysing secondary education and vocational training in Baden-Württemberg. The concept of a longitudinal survey they developed for this purpose will be carried out over the next years in Mannheim and Freiburg with the support of the Baden-Württemberg Foundation.

In 2012, several new interdisciplinary networks for empirical education research were launched in which the research area participates. These include the international OECD study “Abilities and Social Progress”, the College for Interdisciplinary Education Research (a joint initiative of the BMBF, the Jacobs Foundation, and the Leibniz Association), and the Leibniz Research Network on Education Potential.

RESEARCH AREA: SOCIAL WELFARE INSTITUTIONS

- Evaluation of Labour Market Policies
- Behavioural Microsimulation

Economists in this research area analyse how social policies, especially labour market and family policies, affect individuals and households. Typically, researchers focus on employment and wage outcomes, and increasingly examine employability. The objective is to identify the causal effects of programmes and specific policy measures and to provide policy-makers with high-standard policy evaluation. The studies rely on a broad spectrum of advanced control group approaches and on behavioural microsimulation.

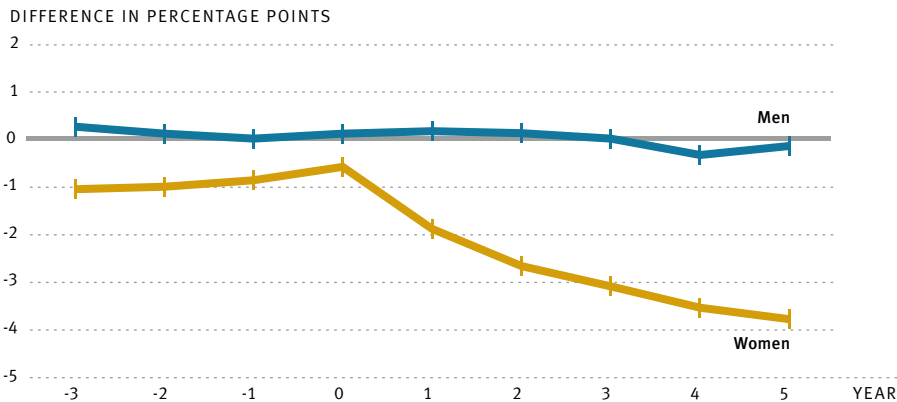
In 2012 the research area participated in two projects evaluating marriage and family-related benefits and policy measures in Germany. The projects were commissioned by the Federal Ministry of Family Affairs, Senior Citizens, Women and Youth, and the Federal Ministry of Finance. A current project investigates the effect of marriage and family-related benefits on the birth rate. Building on last year’s evaluation of key benefits, researchers developed a dynamic microsimulation model to estimate the long-term consequences of policy-based behavioural changes and the effects of benefits on important life transitions (marriage, divorce, child birth). The study showed that the “splitting rule” (which allows spouses to pool and equally divide their income

to determine tax liability) as well as the cost-free extension of government insurance coverage held by a working partner to his or her spouse, directly reduced the participation of married women in the labour market, especially in the case of young families (Figure 3). According to the study’s model, the splitting rule had little effect on the labour supply of married men, but reduced the full-time employment rate of women by almost four percentage points. Viewed over time, the lower level of career experience women collect reduces their wages and can also have an adverse effect on women’s employment in the later stages of family life.

Over the last several years economists in this research area have collaborated with the research area of “education economics” to build expertise in the evaluation of diverse labour market and education policy measures at the junctures between school, professional training, and career. In particular, researchers have looked at groups known to have difficulties on the labour market.

In 2012 the research area continued work on two long-term projects commissioned by the German Federal Ministry of Labour and Social Affairs. In the first project researchers evaluated apprenticeship training subsidies, specifically the completion rate of subsidised and non-subsidised apprentices who either did not get a job or did not enter the workforce immediately after

3] THE EFFECT OF THE SPLITTING RULE ON THE FULL-TIME EMPLOYMENT RATE BEFORE AND AFTER MARRIAGE



Source: ZEW simulations on the basis of the Socio-Economic Panel Study
 The figure shows the difference in the rate of full-time employment compared with a hypothetical scenario in which the married couple are taxed separately. Five years into marriage, the rate of women in full-time employment is four percentage points lower due to the splitting rule than for those who file taxes separately.

school. The study found that in the first 24 months of training, participants who received subsidies were no more likely to complete the apprenticeship than those who did not. In the second project, researchers evaluated a programme funded by the European Social Fund aiming at improving the professional language skills of migrants, especially with regard to the programme’s impact on later employment chances of the participants.

RESEARCH AREA: PERSONNEL ECONOMICS

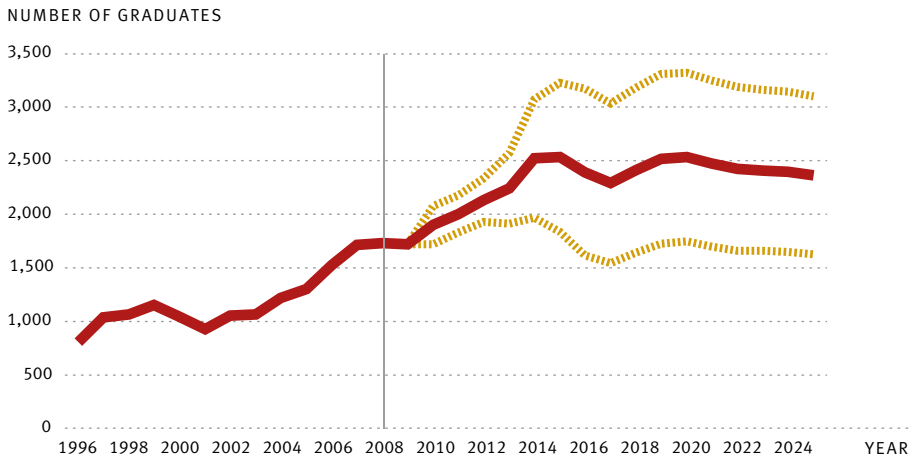
- Insider Econometrics
- Enterprises and Demographic Change

Human resource management helps firms to meet their objectives, especially when it comes to increasing or preserving productivity, to improving motivation, or to increasing employee attachment. Many factors determine the extent and focus of human resource management. The employees themselves also profit from high quality human resource management, as it enables them to better contribute their individual skills, attitudes, and needs. This research area analyses the mechanisms of optimal human resource management.

In 2012 the area continued to develop its research agenda, focussing on matters of human resource management that illustrate and explain interactions between business management and employees. For this, researchers gathered new data on businesses and employees and assessed their quality. They also began a cooperative project with Professor Dirk Sliwka of the University of Cologne, commissioned by the Institute for Employment Research. The purpose of the project is to develop a research dataset that links surveys on strategic human resource management with employee surveys and administrative data. The project is also using experimental methods to investigate the effects of financial and non-financial incentives on employee motivation and company innovation.

BASF SE commissioned the research area to develop a disaggregated forecast model that uses time series data from official statistics to estimate the number of graduates at German uni-

4] FORECAST OF GRADUATE NUMBERS FOR THE FIELD OF INDUSTRIAL ENGINEERING AND MANAGEMENT



Historical trend and forecast for graduate numbers in industrial engineering and management at universities in Germany ("Diplom" and "Master" degrees), 1996–2025. Source: ZEW (2012)

versities by major subject for the coming decades. The resulting model predicted that the number of university graduates will rise until 2020 and then slowly start to level off afterwards. The graphic in Figure 4 shows the graduation trends for the subject group of industrial engineering and management (Wirtschaftsingenieurwesen). In recent years the number of graduates has risen steadily. By 2014, however, graduation numbers will begin to stagnate. Nevertheless, over the mid-term the number of graduates should be greater than in the period from 1996–2008.

The study also regarded other European countries, although the results are less reliable due to limited data and varying degree curricula. Generally, the study forecasts increasing numbers of university graduates through 2025 for Austria, the Netherlands, and Spain. In some countries, such as Poland and the Czech Republic, the share of graduates seems to have peaked, with over 60 per cent in the latter and 80 per cent in the former. Based on these predictions, the recruitment of foreign staff may not always suffice to offset skilled employee shortages in Germany.

In the future, the research area plans to put more emphasis on work-related further training, drawing on newly linked employee-employer data in cooperation with Professor Thomas Zwick of LMU Munich. It will also measure the effect of strategic human resource management on employee work quality using new datasets. It has initiated collaboration with doctors and organizational psychologists from a variety of institutions, and it plans to start a workshop for improving exchange between research and practice.

OUTLOOK

Fortunately, the German labour market continued to develop robustly in 2012, and mid-term prospects are good. For many members of the European Union, however, there is reason for worry that unemployment will continue its historic rise. The German example shows that fundamental labour market reforms and a cooperative climate between employers and employees can induce a turn for the better. The structural causes of growing unemployment in Europe are as diverse as its national labour market institutions. For this reason, every affected country has to find a way to create the structural conditions for more and better employment.

A look beyond national borders can reveal promising approaches for how to reform domestic labour markets. The Research Department of Labour Markets, Human Resources and Social Policy will use its expertise in the microeconomic assessment of labour-market and social-policy institutions and measures to augment its contribution to policy discussion on the European level. The Research Department plans to expand its cooperative research with other centres for labour market research in Europe to show how EU employment objectives can be reached.

Education is the key for sustained unemployment reduction. This is why the EU's 7th Framework Programme for Research focuses on the early years before entry into the workforce. The Research Department is preparing collaborative projects within the Framework Programme that address the quality of early childhood education and options to improve the integration of youths into the labour market.

» STANDING ON THE SHOULDERS OF GIANTS.



Dr. Georg Licht
Head of the Research Department
Industrial Economics and
International Management





innovation

RESEARCH DEPARTMENT INDUSTRIAL ECONOMICS AND INTERNATIONAL MANAGEMENT



Dr. Georg Licht
Head of Department



Jürgen Egel
Deputy



Dr. Bettina Peters
Deputy



Dr. Christian Rammer
Deputy

RESEARCH AREAS

- **Innovation Research and Innovation Policy**
Contact: Dr. Bettina Peters, Dr. Christian Rammer
- **Start-ups and Industry Dynamics, Firm Foundations**
Contact: Jürgen Egel, Dr. Bettina Müller
- **Cross-Section Area: Data**
Contact: Dr. Sandra Gottschalk, Daniel Höwer

MISSION STATEMENT

The Research Department “Industrial Economics and International Management” analyses firm behaviour under dynamic market conditions. In its research projects, the Research Department addresses challenges which firms and economic policy are facing as a result of the on-going European and global integration. It analyses and evaluates measures taken by decision makers in the areas of economic and company policy, and it offers economic policy advice. Innovation behaviour, market entry and exit, and the dynamics of firms are key research topics. Employing macroeconomic as well as microeconomic methodologies, the Research Department is maintaining interdisciplinary co-operations, for example with legal scholars.

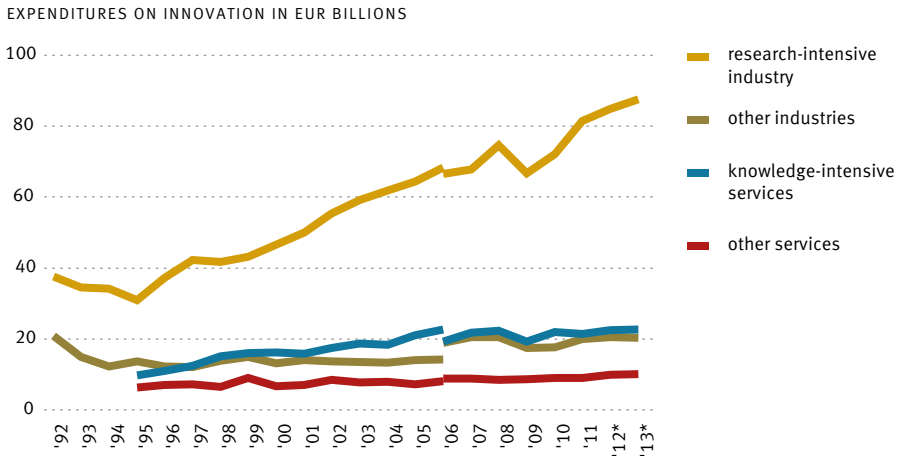


RESEARCH AREA: INNOVATION RESEARCH AND INNOVATION POLICY

- Determinants of Innovative Behaviour
- Indicators and Measurement of Innovation Activities
- Internationalisation of R&D and Innovation
- Intellectual Property Rights and Innovation Incentives
- Public R&D Infrastructure and Technology Transfer
- Evaluation of R&D and Innovation Policy
- International Trends in R&D and Innovation Policy

Since 1993 a key activity of economists in this research area has been to produce the Mannheim Innovation Panel (MIP), an annual panel survey of business innovation in Germany. Commissioned by the German Federal Ministry of Education and Research and carried out in cooperation with the Institute for Applied Social Science (ifas) and the Fraunhofer Institute for Systems and Innovation Research (ISI), the MIP is Germany's contribution to the European Commission's Community Innovation Surveys (CIS). The MIP is an important source of data for a multitude of research and advising projects at ZEW, many of which are undertaken in cooperation with other institutes and researchers. Data from the 2012 study – the MIP's twentieth iteration – were the basis for research papers on the effects of various phenomena, including patent thicket on innovation decisions, effect of disclosure on patenting, environmental innovations on employment, vertical market power on suppliers' innovation activities, and organizational innovation on the success of environmental protection policy. Since the MIP was started, its data have been used

1] EXPENDITURES ON INNOVATION BY THE GERMAN ECONOMY, 1992–2013



* Target figures from spring/summer 2012

Source: ZEW, Mannheim Innovation Panel

by more than 240 external researchers based in Germany and abroad. In 2012 the research area participated in two studies commissioned by the European Commission concerned with examining key enabling technologies. A project titled “Exchange of Good Policy Practices Promoting the Industrial Uptake and Deployment of Key Enabling Technologies” compared EU-27 states and other non-EU countries to identify a sensible mix of policies for supporting key technologies. ZEW’s primary contribution was the assessment of patent applications for inventions in micro- and nanoelectronics, in advanced manufacturing, in advance materials, and in photonics. The second study, titled “KETs Observatory”, tested the feasibility of a permanent system for monitoring the development of key enabling technologies in Europe. ZEW’s contribution involved the use of technology classifications in patent databases to identify patent applications for key enabling technologies. Based on these findings ZEW then determined Europe’s most important innovators and Europe’s competitive position in various key enabling technologies.

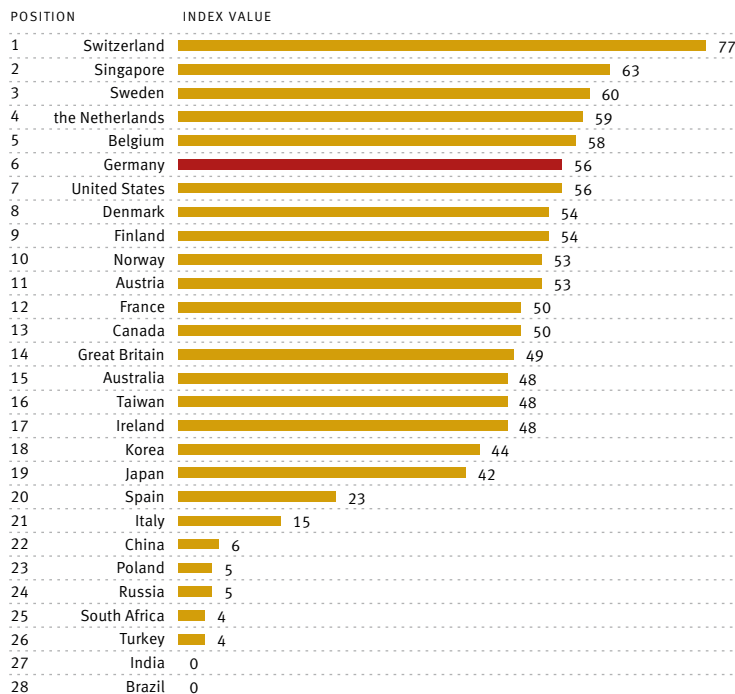
Another area of work of the Research Department was the “Innovation Indicator Germany”, an integral indicator study commissioned by the German Telekom Foundation in cooperation with the Federation of Germany Industries to assess Germany’s performance in developing, introducing, and using innovative technologies. Together with Fraunhofer ISI, the Research Department has been responsible for the scientific implementation of the project since 2010. Researchers used an econometric model to assess the importance of different input and output indicators and then select a set of indicators which helps to explain a country’s scientific, technological, and economic performance. In contrast to a series of similar indicators, the ones used by ZEW and Fraunhofer ISI stress the efficiency of input-to-output conversion. Time-series analysis allowed the extrapolation of in-

indicator values through 2011. The results of the 2012 study show that Germany's position declined slightly compared to the previous year. In particular, Germany has been investing less in R&D following the 2008–09 crisis than the United States, the Netherlands, and Belgium (Figure 2).

In 2012, ZEW researchers also concluded the SEEK project “Product Innovation under Uncertainty”, a three-year investigation of whether flexible resource allocation for innovative products increases market success. The study showed that the likelihood of releasing a successful new product is lower when a lot of money is poured into only a few ideas in the beginning than when resources are spread over a wide range of ideas, and only later the focus is being narrowed to the most promising. On the basis of these findings, the project team drew up recommendations for promoting innovation and presented them in a policy brief. In particular, they suggested a two-stage approach for R&D funding: In the first stage, a variety of projects should receive modest funding; in the second stage, only those projects that meet ambitious milestones should stay funded, but those that do should receive considerable financial support.

Another SEEK project for the research area was titled “Patent Litigation in Europe”. Its objective was to find empirical evidence supporting arguments in favour of a single, efficient patent

2] INNOVATION INDICATOR 2012



Source: Fraunhofer-ISI/ZEW/Deutsche Telekom Foundation

system for Europe. The international project team systematically compared patent-related court cases in Germany, the United Kingdom, the Netherlands, Belgium, and France for 2000–2008. Work in 2012 concentrated on assembling data from the United Kingdom, France, and the Netherlands. Researchers used highly comparable core variables: the plaintiff’s suit, the court’s ruling, the consequences of the decision, the parties involved, and the patent in question. At a workshop in Brussels researchers discussed their initial results with officials from the European Commission and other decision makers in the field of patent enforcement policy.

In another SEEK project, titled “The Research Use Exemption from Patent Infringement – Boon or Bane?”, researchers examined the advantages and disadvantages of the research use exemption by which third parties may use patented inventions for research purposes. In particular, the study sought to understand how incentives to innovate differ between “knowledge receivers” and “knowledge providers”. Researchers used two different approaches. In the theoretical section, they designed different versions of the research use exemption and examined effects on innovation incentives. They discovered that the incentive to patent was negatively influenced by the research use exemption, while the incentive to invest in R&D was positively influenced. In the empirical section, researchers surveyed the perception of the research use exemption in two countries: Germany, which permits a wide-ranging research use exemption, and Australia, whose common law jurisdiction causes legal uncertainty of some extent. The surveys revealed a high positive correlation between the research use exemption and the propensity to patent inventions. One explanation for this result is that the differentiation of inventors into “knowledge receivers” and “knowledge providers” is not straightforward in the empirical case.

RESEARCH AREA: START-UPS AND INDUSTRY DYNAMICS, FIRM FOUNDATIONS

- High-Tech Start-ups
- Firm Survival and Insolvency
- Determinants of Firm Growth
- Evaluation of Public Support for Young Firms
- Financing of Young Firms

One of the main activities of this research area is conducting the KfW/ZEW Start-up Panel, which is designed to provide policy-makers and researchers with up-to-date, empirically testable data on start-up companies in Germany. A collaboration of ZEW with the KfW Banking Group and the credit rating agency Creditreform, the annual survey tracks the development of start-ups for multiple-year stretches, creating a wide range of firm-specific data. Each year telephone interviews are conducted with some 6,000 companies selected randomly by industry and founding year from the Mannheim Enterprise Panel (MEP). For 2012, the analysis focused on employment fluctuation, internal financial potential, and start-up access to external financing.

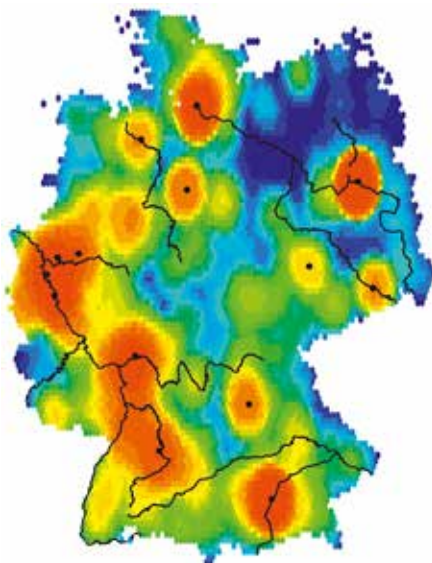
In 2012, the research area was commissioned by the Bavarian State Ministry for Economics, Infrastructure, Transportation, and Technology to compare start-ups dynamics in Bavaria with

those in other German states. The study showed that start-up intensity (i.e. the number of start-ups per 10,000 employable persons) was higher in Bavaria than anywhere else in Germany, for all sectors taken together as well as for the research- and knowledge-oriented industries in particular. The study also looked at the socio-economic characteristics of entrepreneurs, start-up characteristics (e.g. location, financing, complete or part-term basis), the early development of young firms (e.g. survival, growth), and the particular features of innovative start-ups.

The research area also studied state-level start-up activity for the Baden-Württemberg Ministry of Rural Space and Consumer Protection. Researchers compared start-ups in the State of Baden-Württemberg with those in other German federal states. The study focused on start-ups in the high-tech sectors of manufacturing and service industries, especially the fields of environment, health, mobility, information technology, and communication technology.

Between September and November 2012 the research area completed the study “Start-up Dynamics in the ITC Sector” (Figure 3). It was commissioned by the Federal Association for Information Technology, Telecommunications, and New Media (BITKOM) to examine the development, distribution, and market exit rates for start-ups in the information and communication technology sector (ICT). The analysis was carried out with the help of the Mannheim Enterprise Panel (MEP) and the KfW/ZEW Start-up Panel, the latter of which helped determine the extent of young entrepreneurs’ innovation activities, how they finance their companies, and the amount of human capital at their disposal. Researchers compared ICT start-ups with other start-ups in the high-tech

3] REGIONAL DISTRIBUTION OF ICT START-UP ACTIVITY (2008–2011)



Extrapolated start-up figures for 2008 – 2011

Source: Maps by GfK Geomarketing; data from the 2012 Mannheim Enterprise Panel (ZEW)

sector and with start-ups in all other industries. It turned out that ICT firms mainly arise in metropolitan areas: Munich, Berlin, the Rhine-Main region, Hamburg, and Cologne/Düsseldorf. Start-up activity in the ICT sector is comparatively dynamic. At the same time, young ICT firms fail more frequently than in other sectors. The “capital” of young ICT companies is first and foremost the abilities of founders and employees, and is associated with a strong emphasis on innovation.

The research area also participated in two SEEK projects. The first, “How Do Banks Screen Innovative Firms?”, investigated the financial decisions banks make with regard to start-ups. The study’s findings indicate that banks rely less on external rating information when it comes to innovative start-ups than they do for companies in traditional industries. Young companies have difficulties receiving financing from large banks regardless of the industry they are associated with.

For the second project, “Fostering the Competitiveness of the European Car Industry”, ZEW researchers and economists from the University of Leuven in Belgium sought to assess the effectiveness of public subsidy measures for automobile manufacturers (some of the chief beneficiaries of state aid during the 2008–09 financial crisis). The project team developed a structural oligopoly model to investigate scrappage schemes in nine European countries with significant car industries. The model was used to perform several counterfactual scenarios (e.g. mergers, market exits). A surprising finding was that the welfare loss associated with a market exit exceeded the welfare loss associated with a scrappage scheme, making the latter the lesser evil. These and other results were discussed at a workshop held at the representative offices of Baden-Württemberg in Brussels with experts from the European Commission and the European automobile industry.

The research area hosted the ZEW International Conference on the Dynamics of Entrepreneurship (CoDE), which took place on 4–5 October 2012. The conference brought together about 100 start-up researchers from Germany, Europe, the United States, Japan, and China. Some 40 papers were presented, selected from over 150 submissions, and the plenary sessions featured talks by renowned professors. The conference also included a podium discussion in which experts from the worlds of politics, business, and finance discussed the financial difficulties faced by young firms. On account of the positive feedback the event received, a follow-up conference is currently being considered.

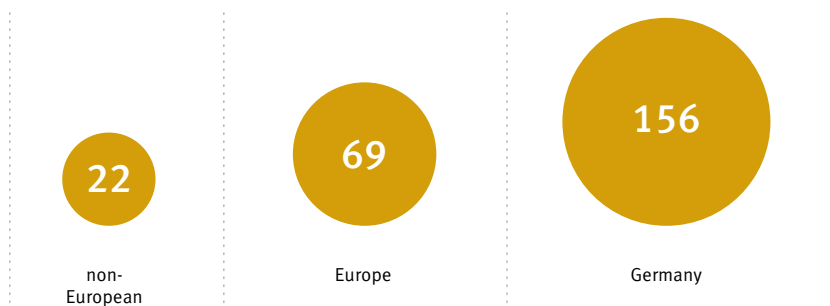
CROSS-SECTION AREA: DATA

- ZEW Research Data Centre
- Mannheim Innovation Panel (MIP)
- Mannheim Enterprise Panel (MEP)
- KfW/ZEW Start-up Panel
- Data on Start-up Activity in Germany

Research on innovation and firm dynamics would not be possible without the company databases ZEW has assembled over the past years. As part of their project work, economists in the Research Department carry out the essential task of improving and expanding these databases.

Thanks to the Mannheim Enterprise Panel (MEP) and the Mannheim Innovation Panel (MIP), ZEW possesses a rich portfolio of firm-level panel data which is unique in Germany. The MEP database is probably the most comprehensive database on the development of firms in Germany aside from government statistics, which are difficult to access for analyses at the micro level. In addition, a new enterprise panel – the KfW/ZEW Start-up Panel – was established in 2008 to focus on start-ups in their initial years of business. Thanks to its partnership with Bureau van Dijk Electronic Publishing, ZEW has exclusive access to the world's largest M&A database. The research area also collects patent data from patent offices (especially the European Patent Office, the German Patent and Trademark Office, PATSTAT) and prepares them for research studies. The European patent data are regularly linked to ZEW firm-level databases. The collected data are also used by other research units at ZEW.

4] EXTERNAL DATA USERS OF THE MANNHEIM INNOVATION PANEL BY REGION



In 2012, ZEW established its Research Data Centre, known as the FDZ (Forschungsdatenzentrum). Accredited in November 2012 by the German Data Forum, it has markedly improved the external accessibility to micro-level data collected by ZEW. The data mostly come from ZEW firm surveys, including the Mannheim Innovation Panel, surveys of the information economy sector, and the KfW/ZEW Start-up Panel, as well as from the ZEW expert survey Financial Market Test. In the coming years, ZEW intends to expand the provision of datasets by the FDZ, e.g. through new firm surveys. In 2012, some 260 researchers used ZEW data. For pre-defined scientific projects, external researchers may apply to use ZEW datasets, but access to these sets is only permitted at the FDZ facility.

Some of the data accessible to external researchers is provided in anonymised scientific-use files. To date, 247 external researchers have accessed the scientific-use files of the MIP (Figure 4), including 34 researchers who carried out their work at ZEW. Their research stays ranged from several days to several months. Twenty researchers requested education-use files based on the

MIP for teaching. Since the beginning of 2011, microdata of the KfW/ZEW Start-up Panel have been available as scientific-use files. Data sharing agreements were made with six researchers, four of them working locally at ZEW.

OUTLOOK

2012 was a watershed year for the Research Department of Industrial Economics and International Management. With the founding of the Leibniz-ScienceCampus “Mannheim Centre for Competition and Innovation” (MaCCI), the new Research Group “Competition and Regulation” was established, which previously had been a key component of the “Industrial Economics” Research Department. Previous members of the Research Department now form the core staff of this new Research Group.

In the future, the Research Department will put more emphasis on the analysis of dynamic competition. “Innovation research and policy” and “start-ups and firm dynamics” will remain core research areas, but will be expanded to include further topics. In the near future, for example, researchers will turn to the “economics of science”, and seek to answer various questions: How do public and private research institutes compete? What is the optimal configuration of public and private research? How can cooperation between public and private researchers be improved using an open-access approach to innovation? Changes are also scheduled for the Research Department’s work on the patent system. The previous focus on incentives and allocation mechanisms will be supplemented by the analysis of other proprietary rights such as trademarks and registered designs. Another focal point will be the assessment and classification of mission-oriented technology policies. Such policies are a rising trend throughout Europe and are particularly evident in public funding for renewable energy technology and in research on electric vehicles.

In the coming years, the research area of “start-ups and firm dynamics” will take a synoptic view of the start-up and failure of firms investigating related topics such as entrepreneurial learning and second chances. Researchers will examine the dynamics of start-ups and growth in separate sectors and areas of technology (e.g. creative economy, biotech). Studies of state funding for young firms will delve into the different governance models for public venture capital funds and compare them with alternative financing options.

In 2012, the BMBF decided to continue its funding of the Mannheim Innovation Panel. The Mannheim Enterprise Panel will be extended to cover more countries, continuing the expansion of the Research Department’s data infrastructure.

» REDISTRIBUTION MUST ACCOUNT FOR TAX BASE MOBILITY.



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





tax systems

RESEARCH DEPARTMENT CORPORATE TAXATION AND PUBLIC FINANCE



PD Dr. Friedrich Heinemann
Head of Department



Florian Misch, PhD
Deputy

RESEARCH AREAS

- **Corporate Taxation and Tax Location Analysis**
Contact: Prof. Dr. Christoph Spengel, Lisa Evers
- **Empirical Effects of Corporate Taxation**
Contact: Prof. Dr. Christoph Spengel, Dr. Katharina Finke
- **Decision Making in Tax and Financial Policy**
Contact: PD Dr. Friedrich Heinemann
- **Fiscal Competition and Federalism**
Contact: Florian Misch, PhD

MISSION STATEMENT

This Research Department addresses questions related to corporate taxation and empirical public economics. The Research Department's key line of research concerns the consequences of high international mobility for tax and financial policy, as well as the scope, structure, and responsibilities of the public sector. The Research Department is a leader in the international comparison of tax burdens in Europe thanks to its tax analysis models, including the European Tax Analyzer. Moreover, the Research Department possesses extensive expertise in the use of complex datasets related to taxation and public finance. In its activities, the Research Department devotes special attention to European integration processes through the analysis of EU tax harmonisation, fiscal governance in the eurozone, and the EU budget.



RESEARCH AREA: CORPORATE TAXATION AND TAX LOCATION ANALYSIS

- International Comparisons of Effective Tax Burdens
- Harmonisation of Company Taxation in Europe
- Tax Databases

Economists in this research area are concerned first and foremost with analysing corporate taxation in Europe, including national and pan-European reform and harmonisation proposals. In terms of methods, the maintenance and extension of a toolbox of models for comparing international tax burdens is a key activity. The primary tools of analysis used by this research area are the European Tax Analyzer, the Devereux & Griffith model, and the firm-level microsimulation model ZEW TaxCoMM.

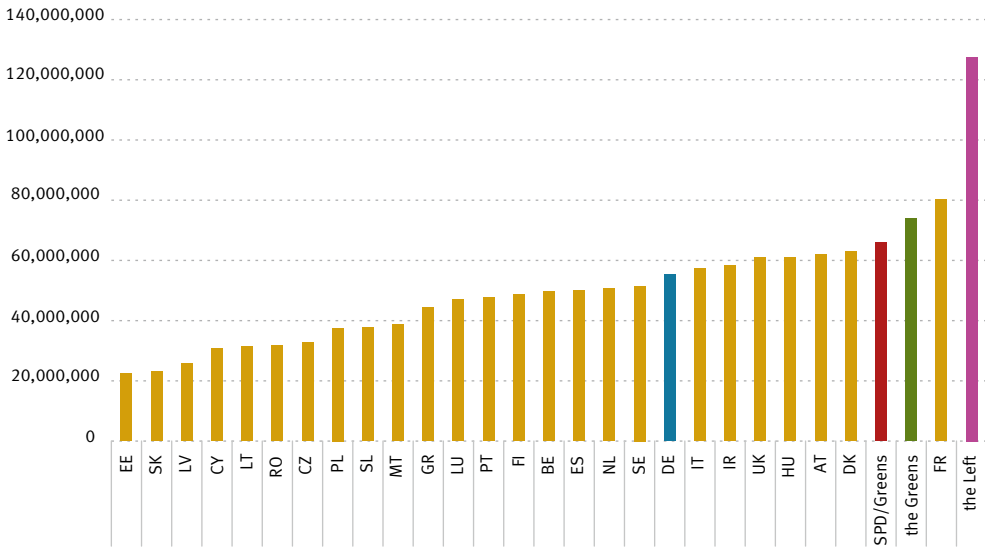
During the year under review, economists in this research area continued their on-going efforts to analyse changes in corporate tax burdens in EU member states. On behalf of the European Commission, ZEW economists used the Devereux & Griffith model to determine effective tax burdens for EU member states and non-EU member states based on current tax legislation. In addition, for the first time, they calculated industry-specific effective tax rates for 13 countries for the period from 1998 to 2011. Moreover, the research area expanded the BAK Taxation Index, which has been prepared for the past ten years with financial support from the Swiss economic research institute BAK Basel Economics AG. The Index assesses the effective tax burdens on companies and on highly skilled workers in 84 locations in 24 nations across Asia, Europe, and the United States.

During the year under review, economists also continued to refine and extend existing models. Thus, as part of a project commissioned by the VU University Amsterdam, they analysed the taxa-

tion of holding and financing companies, assessed R&D activities, and also examined the exploitation of intangible assets by firms. To perform these analyses, they adapted for the first time the Devereux & Griffith model to take into account tax incentives for exploiting intangible assets.

The expertise of ZEW researchers was in strong demand for analysing current tax reform proposals in Germany. Figure 1 illustrates how the 2012 proposals for tax reform proposed by the opposition parties in the German Bundestag in broader terms would impact the effective tax burden placed on corporations and their stockholders as well as Germany's relative position among EU member states.

1] EFFECTIVE TAX BURDEN (IN EUROS) FOR A CORPORATION AND ITS SHAREHOLDERS, 10 CYCLES



Source: ZEW calculations

Calculations of the tax burden in Germany are based on the state of the law as of 2012. The tax burden for other EU member states is calculated in reference to the legal status as of 2010. To illustrate the effects of the tax reform programmes proposed by the SPD and Bündnis 90/Die Grünen, we took into account proposals for a 2014 wealth tax made by the state governments of Rhineland-Palatinate and North-Rhine Westphalia, as well as the SPD reform proposals to increase the withholding tax rate to 32% and the maximum income tax rate to 49%. For the reform plans proposed by Bündnis 90/Die Grünen, we took into consideration the plans for levying a one-time wealth tax of 15% to be paid over a 10-year period, a return to progressive taxation of capital income with the application of the partial income procedure for dividends, and the proposed increase of the maximum income tax rate to 49%. For reform proposals by Die Linke, we included a wealth tax of 5%, progressive taxation of capital income, an increase in the maximum income tax rate to 53%, and a corporate tax rate of 25% (instead of the current rate of 15%).

ZEW TaxCoMM, a recently developed microsimulation model, uses a large sample of firms to quantify the effects of proposed reforms in corporate taxation on income and tax burdens in consideration of differing responses on the part of firms. During the year covered by this report, the model was used in two extensive projects: the first project analysed the effects of interest-adjusted taxation on the tax burden of German companies and on tax revenues. The key principle underlying this reform is to free companies from fictive interest payments on their equity capital in order to eliminate discrimination in the current system against equity capital funding in favour of debt financing. In the second project undertaken on behalf of the Federal Ministry of Finance (BMF), researchers in the area began to develop a detailed analysis of the European Commission's proposed directive for a common consolidated corporate tax base. The focus of this work is on proposed procedures for the determination of profits and their effects on tax burdens and tax revenue in Germany.

Work also continued on a three-year project concerning tax policies in the EU in the light of new fiscal institutions and coordination procedures. Among other issues, researchers are examining potential starting points for limited harmonisation measures in the area of corporate taxation in the EU.

RESEARCH AREA: EMPIRICAL EFFECTS OF CORPORATE TAXATION

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

This research area investigates the effects of taxation on the behaviour of taxpayers in general and firms in particular. There are many points of interconnection between this research area and the previous one. On the one hand, researchers in this area undertake studies that build upon the tax burden indicators developed by the research area of "corporate taxation and tax location analysis". On the other hand, the results of these studies are used by the first research area to incorporate empirically grounded behavioural responses into tax-burden modelling.

A number of studies published during the year under review were conducted as part of a project funded by the German Research Foundation (DFG) to investigate the influence of corporate taxation on the organisational structure of multinational corporations and their investment behaviour. Empirical analysis suggests that increasing taxes on profits results in a significant reduction in private investment. Studies within the framework of this project specifically focused on how taxation impacts the organisational structure of multinational corporations. They found that intermediate holding companies are used as a way of reducing the tax burden resulting from the repatriation of profits. Within individual countries, multinational corporations take advantage of existing group taxation regulations to distribute profits and losses among multiple subsidiaries in a profitable way. Other empirical studies focused on the impact of limitations to interest payment deductibility on corporate financing behaviour. This study formed the basis for the successful completion of a doctoral dissertation by a participating researcher at the end of 2012.

In another DFG-financed project, researchers assessed the effects of taxation on national and international corporate takeovers. Using OECD data on international takeovers, the study examined the effects of reforms in the taxation of cross-border income on the competitiveness of bidders. In addition, the study examines the extent to which the purchaser's debt financing and capital structure is affected by the tax advantages of an externally financed corporate takeover.

An additional line of research addresses the issue of how tax policies affect investment in R&D. During the year under review, the research area was able to obtain renewed funding for this work from the SEEK programme. The study examines how taxes influence firm incentives to invest in research and development and to create intellectual property. ZEW researchers initiated studies to address the question of whether tax parameters play a role in decisions about where to locate research activities, in turn determining where research output takes place.

An economist working in the research area successfully completed an empirically based PhD thesis comparing book-tax conformity between corporations in Germany. This study took advantage of a unique database developed in collaboration with a major accounting firm, which included both taxable and book accounting data for over 100 firms. The database enabled quantification of the differences between tax and book accounting data. Thus, it was possible to analyse the extent to which these differences in book and tax values were attributable to the firms' accounting practices.

During the year under review, the research area also hosted two conferences: a workshop on empirical research in the field of corporate taxation, and a conference with international lecturers from the worlds of academia, politics, and business on the subject of tax-based funding schemes for R&D.

RESEARCH AREA: DECISION MAKING IN TAX AND FINANCIAL POLICY

- Positive Analysis of Tax Policy
- Determinants of Structural Ability to Undertake Reforms
- Determinants of Public Debt

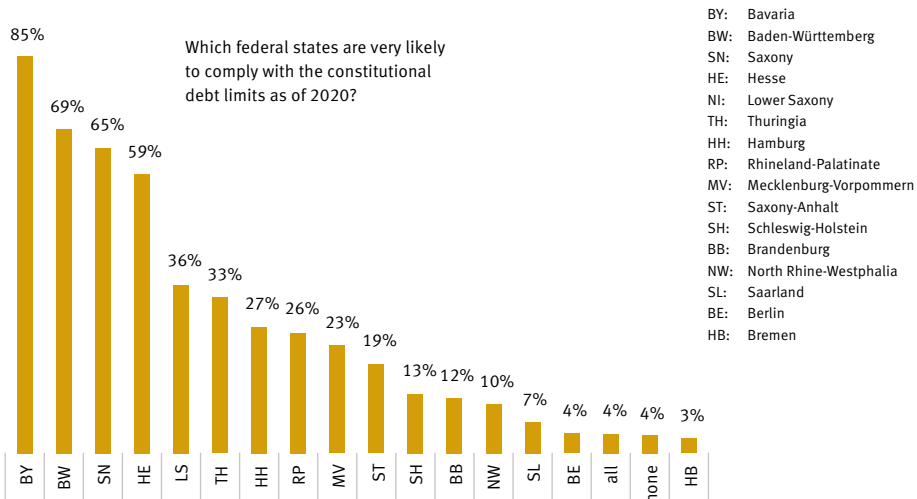
Economists in this research area conduct studies to examine the determinants of real fiscal policy, which often diverges considerably from the recommendations of research in public sector economics. In this work, ZEW researchers address taxation and spending policies as well as debt policy. Their analyses take into account how voter preferences are formed. Understanding preference formation among political actors is also becoming more and more a focus of the research area's work.

During the year under review, as part of the DFG-financed Collaborative Research Centre "The Political Economy of Reforms", the first wave of a survey of legislators in all 16 state parliaments in Germany was completed. The parliamentarians were queried about the debt creation limits added to Germany's constitution, the "debt brake" ("Schuldenbremse"), and about Germany's system for equalising state budgets as well as federal taxation powers. In addition to survey re-

sponses, the compiled dataset includes publicly accessible information about the individual parliamentarians and important data about the different states (Figure 2). Initial analyses have already been completed with the dataset concerning the parliamentarians' opinions on debt limits and state budgetary autonomy. These analyses showed that, on average, the legislators are more optimistic about the chances of adhering to debt limits in their own state than legislators from other states. The study also found, as expected, that the particular economic and fiscal situation of each state has important effects: expectations are clearly more pessimistic for relatively poor and heavily indebted states. In addition, the findings showed a clear strategic relationship between expectations about compliance with the debt limits at the national and state levels: those legislators who are confident that the federal government will meet its debt limit requirement beginning in 2016 are more likely to expect that the federal states will also comply with the zero-deficit rule starting in 2020.

Other studies undertaken by this research area are devoting increasing attention to incorporating specific characteristics of individual policy-makers into their explanations of fiscal performance. Thus, one study examined the extent to which the educational background and political experience of European finance ministers influenced the growth of government indebtedness in their respective nations. The results indicate that the degree of professional and political experience of a finance

2] PARLIAMENTARIANS' EXPECTATIONS REGARDING CONSTITUTIONAL DEBT LIMITS



Source: ZEW survey of all German parliamentarians

The graph shows the proportion of all legislators responding to the survey who expressed the opinion that the respective state is very likely to comply with the constitutional debt limit.

minister particularly contributes to their ability to reduce government deficits. Thanks to funding from the Fritz Thyssen Foundation, ZEW researchers have begun to examine these phenomena at the local level. Currently, publicly accessible information is being collected from newspaper archives about mayors and mayoral candidates in communities located in the State of Baden-Württemberg. As in the national and state studies, the goal of this research is to elucidate the influence of the individual actors responsible for fiscal policy on budgetary performance.

This research area also undertakes studies in response to questions raised in the context of the European debt crisis. Thus, based upon an original survey design, researchers in this area surveyed voter preferences regarding government debt. The economists applied these data to test Ricardian hypotheses about debt preferences, which would suggest a correlation between an individual's remaining time horizon and their tolerance for government debt. The analysis showed that the Ricardian model was inadequate by itself to explain different points of view on government debt. Instead, the findings suggested a significant role for the voters' confidence in political parties and in the government. The greater their mistrust, the less voters were ready to accept fiscal consolidation measures.

Initial analyses were also carried out in an EU-sponsored research project that seeks to explain resistance to reform. Various types of resistance to welfare state reform in Southern Europe were classified and explained using insights from behavioural economics. The theoretical model developed for this study includes a consideration of group effects as well as the theory of bounded rationality. An endowment-sponsored project focused on elucidating the evolution and determinants for willingness to reform in Germany. In the same project, the research area also developed a strategy to improve acceptance of reforms and to prepare an "Agenda 2030", a comprehensive new reform package. An important element of this strategy is enhanced fiscal transparency – for example, by having cost evaluations conducted by an independent institution for the programmes proposed in the election platforms of political parties.

RESEARCH AREA: FISCAL COMPETITION AND FEDERALISM

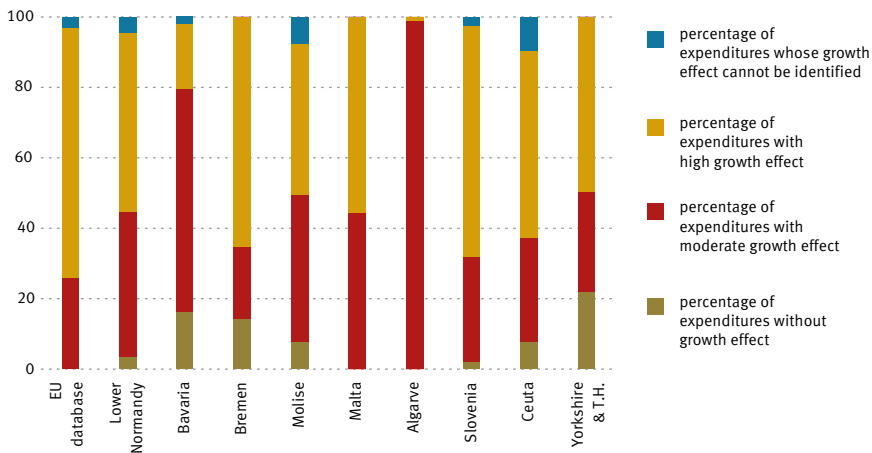
- Fiscal Policy in Regional Competition
- EU Financial Constitution
- Non-Profit Sector

This research area is devoted to studying federal systems under the conditions of increasing factor mobility and greater restrictions on capital markets for the financing of government debt. Research activities focus on Germany's federal system as well as the division of responsibilities between the EU and its member states. Questions related to the division of responsibilities between the public and non-profit sectors are also investigated by economists in this research area.

The Federal Ministry of Finance (BMF) commissioned researchers in the area to conduct a study on EU regional policies to be used in negotiations taking place on a new multi-year financial framework for the EU. The aim was to analyse the actual growth effects generated in this pol-

icy area. For this study, 3,600 different projects located in nine regions of eight member states were classified according to their effects on growth. The findings were sobering: even under the most optimistic scenario, policy-makers should anticipate only moderate to negligible growth effects, despite sizeable budgetary expenditures (Figure 3).

3] GROWTH EFFECTS IN THE OPTIMISTIC SCENARIO



The graph shows a categorisation of regional policy expenditures according to their effects on growth, calculated from a rating of individual projects in each region according to an optimistic scenario. It shows that depending on the region, a significant share of overall expenditures actually have no effects on growth (e.g. over 20% in Yorkshire and The Humber).

Also in the context of the negotiations for a new EU financial framework for 2014–2020, a research project commissioned by the Bertelsmann Foundation examined the potential “value added” by the European budget. Researchers first developed a theoretically grounded method to operationalise the term “European value-added”. Next, they applied this model to empirically test the potential added value of a European Common Agricultural Policy (CAP), joint European ambassadorial representation abroad, and joint EU armed forces. While no European added value could be shown as a result of a joint agricultural policy, the economists found significant savings potentials from increased communitisation in both of the other policy areas.

Researchers in the area have also been contributing to public debates and policy consultations regarding the European debt crisis. The Research Department’s head was asked to serve as an expert concerning the European Stabilization Mechanism (ESM) and the Fiscal Compact for the German Bundestag and before the Federal Constitutional Court, where the laws were negotiated. Efforts were also under way to design an alternative model for stabilising the euro bond market based upon fiscal interest rate equalisation (“FIRE”). A different analysis focused on the

implementation of constitutional debt limits in Germany at the level of the federal states, and developed an indicator for quantifying the toughness of such rules. For the European Commission, researchers conducted a study on how the quality of public administration affects the competitiveness of EU member nations. The study looked at the interactions between the quality of administration and competitiveness from a theoretical point of view, and also developed and applied an indicator-based evaluation model for empirical analysis.

In another project financed by the German Research Foundation, researchers assessed the interaction between the government and the non-profit sector. A part of the project conducted in collaboration with the Karlsruhe Institute of Technology (KIT) specifically examined the interplay between charitable donation and fundraising activities. Since non-profit associations rely partially on private donations, they might be able to use donations to compensate for reductions in tax-financed public funds, so an accurate understanding of donation behaviour is useful. In addition, a project conducted jointly with the VU University Amsterdam examined the philanthropic activities of German and Dutch firms – in the form of donations, sponsorships, and foundations – and their effects on performance. The data were gathered in the form of expert interviews, analysis of annual reports, and an online questionnaire. Initial findings revealed only a weak correlation between corporate philanthropic activities and financial performance. One explanation may be that until now, firms have failed to adopt a strategic orientation to their philanthropic activities.

OUTLOOK

The global financial crisis and the European debt crisis have been accompanied by major challenges to national budgets. This raises a number of questions regarding appropriate tax policy strategies. In the years immediately preceding the crisis, the predominant effort in corporate taxation was to take steps toward realising a competitive, decision-neutral, and growth-friendly tax system. By contrast, one sees a greater emphasis now on other elements, such as politically acceptable (“fair”) distribution of tax burdens. The Research Department will continue to apply its toolbox of analytic instruments in this new debate about tax policy to uncover the benefits and risks of new proposals for tax reform at both the national and European level and to design its own alternatives for reform.

To accomplish these goals, the Research Department will continue to expand its leadership position in the field of model-assisted tax burden comparison through targeted refinements and improvements. Researchers will devote increasing attention to the issues in international corporate taxation that stem from the dissemination of new regulations to combat tax abuse, such as interest rate caps. In upcoming years, economists will place a special emphasis on detailed size-class modelling. This method enables increased accuracy in analysing which tax conditions might disproportionately impact small to mid-sized versus large enterprises in EU states.

The Research Department plans to intensify its financial research activities that are explicitly related to the EU. The plans include extensive analyses regarding the optimal allocation of federal responsibilities between the EU and its member states under changing framework conditions. Moreover, the newly emerging fiscal governance structure in the EU raises many new theoretical and empirical questions to which researchers in the Research Department will turn their attention. An important example at the EU level is the new European Fiscal Compact, and at the national level, constitutional debt limits.

» SUPPORTING THE
TRANSITION TO
RENEWABLES WITH
TARGETED ECO-
NOMIC RESEARCH.



Prof. Dr. Andreas Löschel

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



energy

RESEARCH DEPARTMENT ENVIRONMENTAL AND RESOURCE ECONOMICS, ENVIRONMENTAL MANAGEMENT



Prof. Dr. Andreas Löschel
Head of Department



Dr. Klaus Rennings
Deputy

RESEARCH AREAS

- **Energy Economics**
Contact: Prof. Dr. Andreas Löschel
- **Innovation and Sustainable Development**
Contact: Dr. Klaus Rennings
- **International Environmental and Resource Policies**
Contact: Dr. Oliver Schenker
- **Transport and Mobility**
Contact: Dr. Martin Achtnicht
- **Macroeconomic Analysis of Environmentally Relevant Policies**
Contact: Dr. Michael Hübler, Prof. Dr. Andreas Löschel

MISSION STATEMENT

The Research Department “Environmental and Resource Economics, Environmental Management” investigates the proper function of markets and institutions with regard to environmental aspects and resource scarcity. A key focus is placed on energy and climate policy.

The Research Department conducts economic assessments of policies that impact the environment such as transport, energy, technology, and economic policy. The research work includes analyses that identify conflicts between economic and environmental goals. Given the universal shortage of resources, a central criterion in the economic assessments is cost efficiency – the ability of a policy to achieve a defined goal at minimal cost.



RESEARCH AREA: ENERGY ECONOMICS

- Energy Demand and Consumer Behaviour
- Policy Instruments and Regulation
- Analysis of Energy Market Developments

Economists working in this research area analyse German, European, and global markets for energy and raw materials. Energy demand and consumer behaviour, regulation, and market developments are all key subjects of study. A guiding principle in such work is the cost-effectiveness and sustainability of energy supplies.

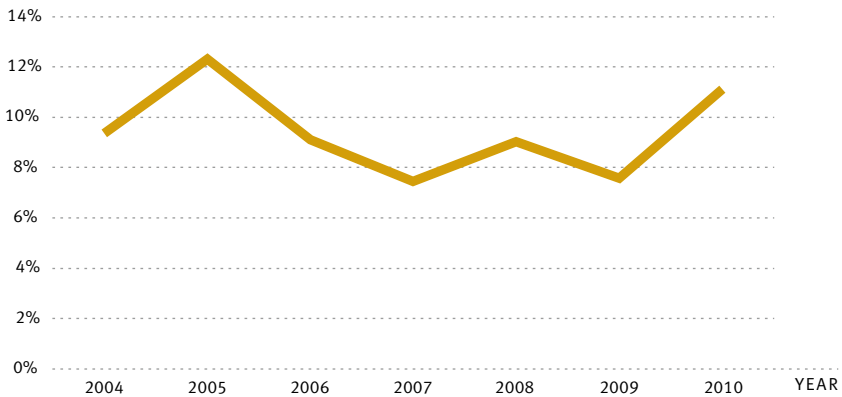
Germany's effort to expedite the adoption of renewables was the defining issue in 2012, and ZEW economists were extensively involved in providing research support for this effort. For example, ZEW economists are participating in the Energy-Trans research project, primarily funded by the Helmholtz Foundation, which is investigating technical, economic, and social factors associated with the transformation of Germany's energy economy. In the project, a particular focus is being placed on the empirical analysis of industrial energy demand, as well as on the impact of regulation.

Future projects undertaken by economists in this research area will study household energy demand and the growing threat of "energy poverty". In addition, economists will continue to study issues related to market design and the cost-effective regulation of energy markets. Last year, for example, ZEW researchers examined the extent to which different market sectors engaged in the practice of "cost pass-through", in which the costs of emissions trading were passed along to customers. The study demonstrated that notification of impending anti-trust investigations had led to changes in such behaviour.

Also in 2012, economists in this area developed an indicator system for analysing the cost-effectiveness, security, and environmental sustainability of energy supplies. They analysed potential indicators and databases, and also developed new indicators – for example, for the flexibility of electricity demand in the “day-ahead market” (Figure 1) – which help to prevent bottlenecks in the electricity supply. The Research Department is also involved in the federal government’s programme to monitor progress in the broad-based effort to transition to renewables, the “Energiewende” in Germany. Prof. Andreas Löschel, German Environment Minister Peter Altmaier, and Federal Minister of Economics Philipp Rösler jointly presented the Expert Commission’s position statement for the first monitoring report at a federal press conference held in December. Economists in the research area are responsible for coordinating the Expert Commission’s work on the monitoring process.

1] FLEXIBLE DEMAND ON THE DAY-AHEAD MARKET FOR ELECTRICITY

FLEXIBLE DEMAND ON THE ELECTRICITY SPOT MARKET RELATED TO ANNUAL ELECTRICITY CONSUMPTION



The illustration shows the share of energy demand that is responsive to price signals on the day-ahead market in the EPEX European Electrical Power Exchange. It shows the proportion of power demand bids that fall between 50% and 150% of the average price during the preceding 365 days. This amount is divided by the annual domestic electricity consumption. A larger share of flexible demand in overall electrical consumption facilitates the prevention of bottlenecks in power supply.

There has been extensive public discussion about rising energy prices. In addition to reflecting the cost of major investment in renewable energy, these price increases have primarily resulted from higher raw materials prices. To help predict future price developments, economists in the research area provide the ZEW Energy Market Barometer, a biannual survey of market participants and experts regarding their short- and medium-term expectations.

In June, together with ZEW’s Research Group of Competition and Regulation and the Mannheim Centre for Competition and Innovation (MaCCI), the research area organised the 2012 Man-

nheim Energy Conference. The conference focused on discussing the rising number of regulatory interventions as well as the interplay between energy market competition, security of energy supply, and policy instruments to promote renewable energy and to encourage innovation.

RESEARCH AREA: INNOVATION AND SUSTAINABLE DEVELOPMENT

- Rules, Indicators, and Strategies for Sustainable Economic Activities
- Determinants and Economic Impact of Environmentally Oriented Innovation
- Macroeconomic Analysis of Green Technology

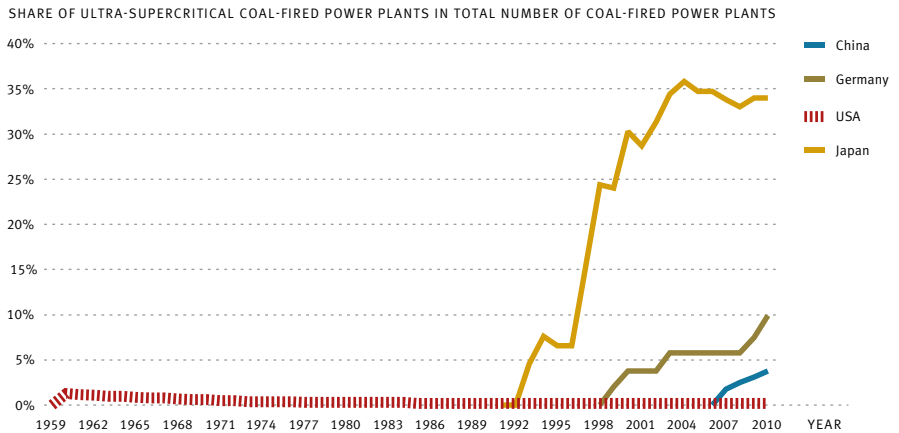
Economists in this research area conduct innovation surveys in order to analyse environmental aspects of innovation behaviour in the German industry. They study a range of important issues, including the determinants of environmental innovation (such as regulation or cost savings), as well as the impact of innovation on firm performance.

A particular subject of study in 2012 was the relationship between a company's eco-efficiency and its competitiveness. Research conducted by economists in this area for the European Commission's Competitiveness Report has shown that product-integrated environmental innovations – for example, in the areas of energy or materials efficiency – can have an especially favourable impact on a firm's economic performance. During the year under review, researchers also finished their work on a SEEK project titled "Climate-Related Innovations, Crowding Out, and their Impacts on Competitiveness". This study examined path dependencies for a wide range of market sectors. It showed that the introduction of environmental technologies by companies depends on their past choice of technologies and also on environmental regulations and subsidies for the use of clean technologies.

The project "Lead Market Strategies: First Mover, Early Follower and Late Follower" addresses the technological leadership in environmental policy held by a number of nations and the corresponding first mover advantages. The project is being conducted on behalf of the "Economics for Sustainability" priority programme of the German Federal Ministry of Education and Research (BMBF). A potentially positive economic secondary effect of ambitious national environmental policies is that the domestic economy takes a lead role in the development of environmental technologies (Figure 2).

Finally, economists in the research area also make use of general equilibrium models in their work (on this subject, see the section on the research area "Macroeconomic Analysis of Environmentally Relevant Policies"). In a SEEK project, for example, researchers worked on integrating supply-side factors related to technology diffusion that have been largely neglected in the economics literature. Important indicators for technology diffusion include private investment as well as a government's environmental policies.

2] USE OF ULTRA SUPERCRITICAL COAL-FIRED POWER PLANTS IN SELECTED NATIONS



The figure shows the dissemination of energy-efficient coal-fired power plants. Japan is clearly in the lead, but Germany is also among the leading nations. China is one nation catching up in this area of technology.

Source: Our own calculations based on data from the International Energy Agency (2011)

At the 2nd SEEK Conference titled “The Green Growth Challenge”, participants discussed ways to successfully achieve sustainable growth that protects the climate while at the same time strengthening European innovation and competitiveness. Conference speakers included Prof. Klaus Töpfer of the Institute for Advanced Sustainability Studies, Prof. Robert Stavins of Harvard University, and Prof. Richard Newell of Duke University.

RESEARCH AREA: INTERNATIONAL ENVIRONMENTAL AND RESOURCE POLICIES

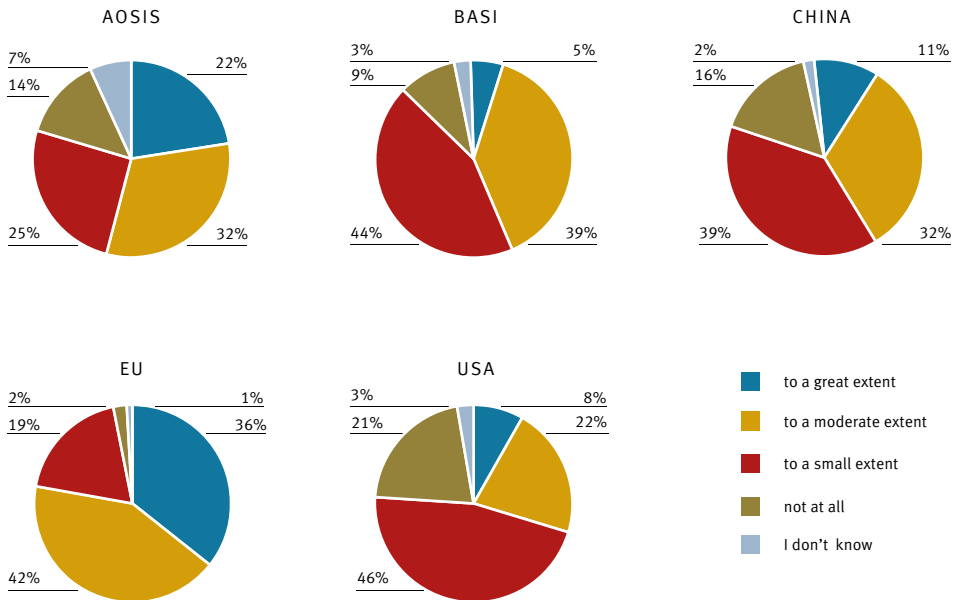
- Institutionalisation of International Environmental and Resource Policies
- Conflicts of Interest with International Trade and Investment Regimes
- International Climate Policy and Resource Management

Economists in this research area study the economic challenges of regulating global environmental problems. An important element of their work is the analysis of international climate policy, an area in which the fairness preferences of heterogeneous actors play a crucial role. The research area hosted a high-level international conference on “New Directions in the Voluntary Provision of International Public Goods”, and the conference proceedings were published in a special issue of the journal *Economica*.

As part of a project financed by the Federal Ministry of Education and Research (BMBF), economists in the area conducted a worldwide survey of national representatives to the UN climate conferences in Durban and Cancun. Some 500 persons from 170 different nations offered their predictions about developments in international climate policy. With respect to the evolution of global emissions trends through 2050, over half of the surveyed representatives expected, at best, small-scale abatement activities on the part of the two countries with the highest emissions (the US and China), unless an international climate treaty can be concluded in the near future (Figure 3).

As long as a global treaty for climate protection remains out of sight, a fragmented approach to addressing future changes would appear to be more realistic. The EU's unilateral commitment to emissions reduction has led to concerns about possible effects on the competitiveness of European industries. This problem was a major concern reported in the KfW/ZEW CO₂ Barometer, an annual survey of international market experts and German companies regulated under the EU Emissions Trading Scheme (EU ETS). The results of the survey show that to date, the costs incurred by companies as a result of climate regulations are having a rather minor impact and are

3] ANTICIPATED REDUCTION IN GREENHOUSE GAS EMISSIONS WITHOUT AN INTERNATIONAL CLIMATE TREATY



AOSIS – Alliance of Small Island States; BASI – Brazil, South Africa, India

The question posed to the negotiators was: "To what extent do you believe (compared to a scenario without interventions) that the following nations or groups of nations will reduce their greenhouse gas emissions by 2050 without a new international climate treaty?"

not posing a threat to their competitiveness or to their business locations in Europe. On the other hand, the current low price levels on the EU ETS are offering little incentive for CO₂ emissions prevention or related environmental innovation.

The risk that unilateral prevention efforts will lead to emissions being displaced to other countries depends largely on the level of international trade interdependence. As part of a recently completed EU research project, economists in the Research Department helped to develop a database (the World Input-Output Database, or WIOD) that makes it possible to perform a detailed analysis of complex global value production chains (for more on this subject, see also the section on the research area “Macroeconomic Analysis of Environmentally Relevant Policies”). For the analysis, researchers developed a computable general equilibrium model that has generated new insights about the effects of climate policy on international value creation chains. Calculations using the model show that economic branches will respond differently to unilateral emissions reduction by the European Union: While branches with low CO₂ intensity in their value creation chain will tend to increase their level of vertical specialisation, unilateral emissions reduction will have just the opposite effects on CO₂-intensive branches. In response to unilateral emissions reduction, CO₂-intensive sectors will tend to preferentially concentrate their activities in an unregulated region. Sectors with lower CO₂ intensity will tend to displace only their most emissions-intensive stages of production.

In a project funded by the Robert Bosch Foundation, the research area continued to extend its cooperation with Chinese institutions and researchers, specifically with Tsinghua University in Beijing and Fudan University in Shanghai. The focus of this research collaboration is on the regulation of greenhouse gas emissions in China based on new emissions trading schemes. Together with the Australian National University, economists in the research area organised a conference with international experts on the emissions trading schemes that are in the process of development in Asia and Australia. In this connection, the research area welcomed visitors from several Chinese delegations, including the Beijing Development and Reform Commission, for the purpose of discussing fundamental questions related to the design of a pilot emissions trading scheme in Beijing.

Even if the world finds ways to achieve ambitious prevention goals, the problem of adjusting to climate change as it occurs will involve important choices. As part of a project on behalf of the German Federal Environmental Agency, economists used a multicriteria analysis approach to study and evaluate alternative policy approaches for promoting private adaptation to climate change.

RESEARCH AREA: TRANSPORT AND MOBILITY

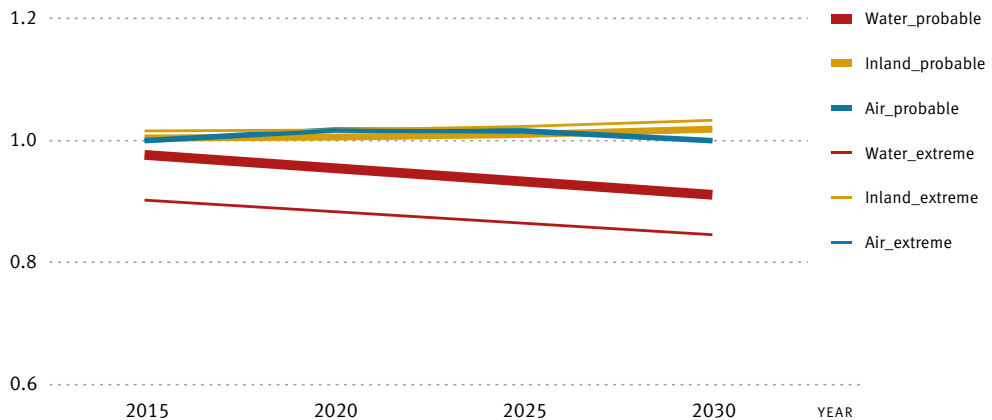
- Ecological and Socio-Economic Effects of Transport Systems
- Concepts for Sustainable Development in the Transport Sector
- Traffic Volume and Modal Split in Freight Transport

The key issue facing economists in this research area is, “How can we initiate a cost-effective transition to a more environmentally friendly and resource-conserving transportation system?” To address this challenge, ZEW economists evaluate options for environmental and transporta-

tion 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 effects, as well as general developments in transport markets.

Building on earlier projects, economists in this research area once again focused on the regulation of CO₂ emissions in the international shipping industry. They studied the best ways to integrate the shipping industry into the existing EU ETS emissions trading scheme in order to efficiently and effectively limit greenhouse gas emissions in maritime shipping, and also explored potential effects of implementing this kind of regional approach on the German and European maritime industry. Simulations using the new WIOD-CGE (World Input-Output Database general equilibrium) model show that incorporating shipping in the EU ETS could help to reduce global emissions. This reduction would occur primarily from a cutback in transport services in the international shipping industry, and also from a shift in transport in favour of domestic modes of transport as well as, to a much lesser degree, in favour of air transport (Figure 4). The model indicated no indirect adverse effects on production in European industries or the relocation of economic activities. The area's research work culminated in the drafting of Germany's submission to a meeting of the Maritime Environment Protection Committee of the International Maritime Organization (IMO).

4] EFFECTS OF REGIONAL EMISSIONS REGULATION ON INTERNATIONAL MARITIME TRANSPORT



The figure shows changes in transport services for different modes of transportation compared to "business as usual" without regulatory measures. "Probable" stands for the likeliest regulatory policy scenario with partial integration of maritime shipping into the existing EU emissions trading scheme and an emissions reduction of 10%, with European territorial waters defined as the area of applicability. "Extreme" designates a scenario with an emissions reduction goal of 50% that incorporates all maritime routes into the emissions trading scheme. Transport services in the international maritime industry would fall between 3% (probable scenario) to 10% (extreme scenario) in 2015. A slight shift would occur in favour of air and inland modes of transport, and over the long term, these changes would increase by over 3%.

Another subject of study for the research area during the year under review had to do with changes in behaviour and usage that result from developing more energy efficient or cost-effective goods. In collaboration with the research area “innovation and sustainable development”, economists have been investigating “rebound effects”. These effects are partly the result of a price or substitution effect; that is, the demand for goods and services tends to increase as they become more energy-efficient or less expensive. Moreover, the decrease in demand caused by energy efficiency leads to a drop in fuel prices, which, in turn, stimulates third-party energy demand and tends to offset the original savings effect. One way to analyse and quantify rebound effects, such as may result from the use of more energy-efficient automobiles, or a new energy-saving light bulb or heating system, is by conducting household surveys. In the analysis, economists particularly focus on the social aspects of the rebound effect, including the role of lifestyles. Initial results suggest that the rebound effect has a greater impact on the mobility sector than, for example, on household energy consumption. One possible explanation for this finding is that until now, people’s mobility needs have been met less fully when compared to their needs for heat or electricity.

Since 1998, the quarterly ProgTrans/ZEW Transport Market Barometer has surveyed experts in the transport industry about their expectations regarding transport prices and volume trends in various freight traffic markets. The Barometer is Germany’s oldest and most broadly constituted transport market index. In December 2012, the 59th edition was published – serving once again as a valuable indicator of economic activity for the transport industry, as a source of information for the general public, and as a database for researchers.

RESEARCH AREA: MACROECONOMIC ANALYSIS OF ENVIRONMENTALLY RELEVANT POLICIES

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

This research area has a cross-cutting character and is distinguished by its methodological approach, which is integrated in all the other research areas. Economists in this area analyse the macroeconomic and sector-specific impacts of economic instruments for environmental policy, with particular emphasis on climate, energy, and resource policies, and on advances in technology and transportation. The research area develops and applies a system of computable general equilibrium (CGE) models and partial models, which facilitate the quantitative estimation of the impacts of economic policy interventions on consumers and producers. The economists’ quantitative analyses are based on microeconomic theory as well as econometric estimations for the purpose of model calibration.

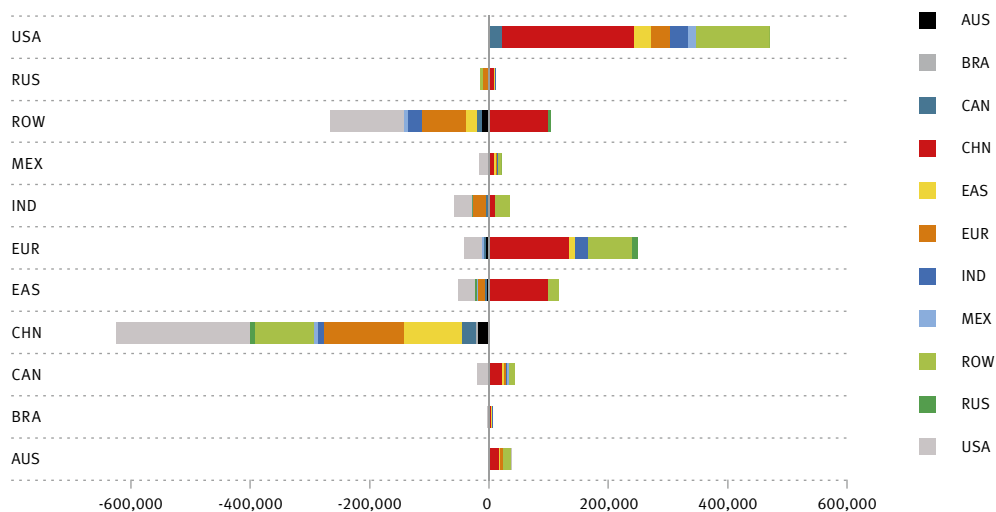
In 2012, in collaboration with a number of European partners, economists in the area participated in the successful completion of a project financed by the European Commission, “WIOD

– World Input-Output Database: Construction and Applications”. The recently developed, extensive WIOD database was used for estimating and modelling the complex interactions between international trade, structural change, and CO₂ emissions (Figure 5). Studies using the new database are being incorporated into a project financed by the Federal Ministry of Education and Research (BMBF) on the relationship between climate policy and economic growth.

In addition, researchers in the area successfully concluded the project “Economics of an Integrated and Long-Term Climate and Energy Policy” on behalf of the Pact for Research and Innovation, in collaboration with the Potsdam Institute for Climate Impact Research. This project included an examination of the uncertainties surrounding the impact of climate change and the feasibility of technology transfer. These uncertainties can further complicate the creation of climate protection coalitions. The concluding workshop took place in Berlin in November, in connection with the opening of the Mercator Research Institute on Global Commons and Climate Change (MCC).

The research area also took part in a comparison of international models on the impact of CO₂-based customs fees, as part of Stanford University’s renowned Energy Modeling Forum (EMF).

5] INTERNATIONAL CO₂ BALANCE SHEET RELATED TO TRADE IN GOODS



The figure presents a CO₂ balance sheet for different nations and regions for 2005. Unlike the usual formulation in US dollars or euros, the trade balance is shown in terms of the CO₂ contained in the products that are traded (in millions of tonnes). Thus, the total quantity of CO₂ resulting from all of the steps involved in the production of the goods is taken into account. Based on their total consumption, the graph thus shows which regions are net exporters of CO₂ emissions, (positive values) and net importers (negative values). In addition, the different colours indicate the source and target regions for the CO₂: AUS = Australia, BRA = Brazil, CAN = Canada, CHN = China, EAS = South Korea + Taiwan + Japan, EUR = EU 27, IND = India, MEX = Mexico, ROW = rest of the world, RUS = Russia, USA = USA.

Source: ZEW calculations based on the WIOD (World Input-Output Database), <http://www.wiod.org>.

The model comparison showed that CO₂-based customs fees could minimise the competitive disadvantages for energy-intensive producers in the EU that result from climate policy measures. From a global perspective, such customs fees would only result in a small reduction in the overall cost of climate policies. The research area also participated in an EMF international comparison of models of European climate policy through 2050, which targets a reduction in CO₂ emissions of up to 80 per cent compared to 1990 levels. This project built upon the findings from an earlier EU project successfully completed in 2012 on the impacts of climate policy on the EU and on European industrial sectors until 2050. The results of the study suggested that the harmonisation of CO₂ prices across EU branches has great potential for mitigating the costs of climate policy. In addition, the findings also indicated a differential impact of climate policy on different EU sectors. Therefore, the study showed that there is a need for greater attention to analysing branch-specific effects and abatement strategies.

In another project concluded during the year under review on behalf of the EU Commission, economists in the area developed an environmental model for the Russian Federation, which made it possible to evaluate Russian sustainability strategies at the regional and federal levels. Another EU project is studying the effects of climate change on the Mediterranean nations. Additional EU-sponsored projects in planning will develop a resource model for examining trade in rare earth elements along with a model that includes different trajectories for technological progress and examines their impact on employment and welfare. The latter project will be undertaken in cooperation with the ZEW Research Department "Industrial Economics and International Management." Economists in the research area also completed work on a SEEK project about the international dissemination of emission-prevention technologies, and began work on a new SEEK project on EU climate policy, trade, and competitiveness. Within this new SEEK project, ZEW co-operates with Carolyn Fisher from Resources for the Future in Washington D.C.

OUTLOOK

Studies conducted by the Research Department aim to improve the informational basis available to policy-makers as well as analyse concrete options for energy and climate policy. Science-based economic policy advice is being provided by the Research Department in the context of Germany's broad-based effort to transition to renewables. The German federal government is regularly monitoring the progress being made in this effort so as to implement necessary policy adjustments. To this end, it has initiated a monitoring process known as "Energy of the Future". The head of the Research Department, Prof. Andreas Löschel, is chairman of the federal government's Expert Commission, which issues an annual report together with the responsible ministries on the status of network expansion, investment in power plants, energy efficiency, the adoption of renewables, and energy costs.

International climate policy will continue to be a major focus of work for the Research Department. Since a global solution for the climate problem remains unlikely, the effects of unilateral climate policy measures on European competitiveness and trade take on particular importance.

Additional focal points of study will include the role of innovation and technological progress for the achievement of energy and climate policy goals as well as the significance of consumer behaviour. Researchers will continue their work on the analysis of determinants for voluntary cooperation among sovereign nations, which will offer an indication of the chances for successfully concluding an international climate protection treaty.

» NEW PERSPECTIVES THROUGH THE INTERNET.



Prof. Dr. Irene Bertschek
Head of the Research Group
Information and Communication
Technologies



internet

RESEARCH GROUP INFORMATION AND COMMUNICATION TECHNOLOGIES



Prof. Dr. Irene Bertschek
Head of Group



Dr. Marianne Saam
Deputy

RESEARCH AREAS

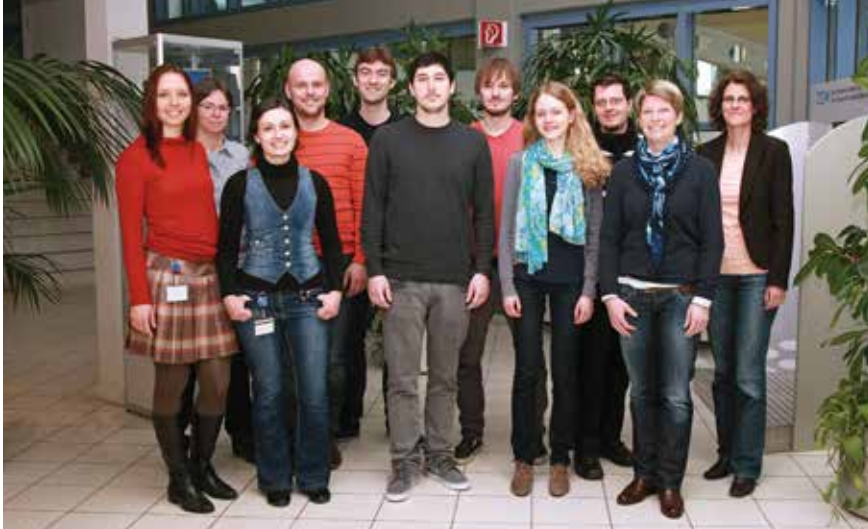
- **Diffusion and Growth Potential of ICT**
Contact: Dr. Jörg Ohnemus
- **ICT, Markets and Corporate Strategies**
Contact: Prof. Dr. Irene Bertschek
- **Digital Networks and Knowledge Acquisition**
Contact: Dr. Marianne Saam

MISSION STATEMENT

The Research Group “Information and Communication Technologies“ (ICT) studies the economic aspects of the production and use of ICT. The Research Group investigates how enterprises, markets, and knowledge acquisition should be organised to optimally exploit the growth and employment potentials of ICT.

Methodologically the Research Group focuses on empirical, especially on microeconomic analyses on the basis of firm-level data collected for this purpose. Additional methods include applied theoretical techniques, simulation models, and empirical macroeconomics.

Our overarching research approach considers the key role of ICT in knowledge-based economies: as tools, media for the transmission of knowledge and information, market platforms, infrastructure elements, and enabling factors for business organisation and innovation.



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

This research area is concerned with the diffusion of ICT as well as the success of firms in the ICT sector and ICT-intensive industries. Economists in this area conduct surveys to investigate which ICT applications are used by firms, the goals pursued with ICT, as well as the associated obstacles firms perceive. In addition to identifying the ways in which specific technologies may be further developed, researchers examine how the successful use of ICT can promote growth in firms, specific sectors, and in entire national economies.

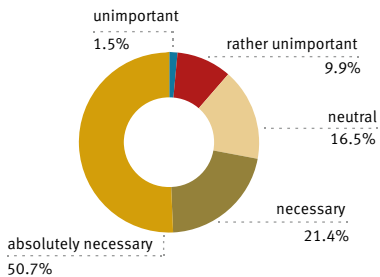
In 2012, the Research Group participated for the first time in preparing the “Digital Economy” monitoring report, which is drafted on behalf of the German Federal Ministry for Economics and Technology (BMW) on the occasion of the annual IT summit. The project has been assigned through 2015 to a consortium consisting of the market research company TNS Infratest and ZEW. The report examines the performance of the ICT sector and Internet-based industries in Germany and evaluates Germany’s international standing as an ICT business location. Statistical analyses have shown that the ICT sector is responsible for nearly 4.5 per cent of total commercial value creation in Germany – a greater share than that of the traditional automobile and mechanical engineering

sectors. With some 843,000 jobs, the ICT economy also accounts for 3.1 per cent of all business employment. This past year the monitoring report took a closer look at the role of the Internet for company success and at cloud computing.

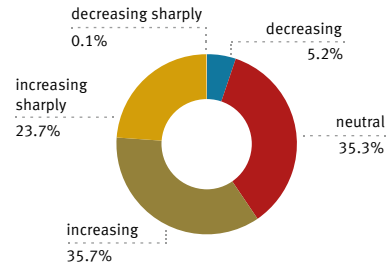
ZEW's quarterly survey of ICT-intensive firms titled "Business Survey in the Information Economy" found that in 2012, half of the companies in the information economy regarded the Internet as being of major importance to their success. As might be expected, firms in the ICT sector reported the largest correlation between their Internet activities and their business performance (70 per cent, see Figure 1). By comparison, the Internet was regarded as being somewhat less important for business performance by the two other sub-sectors, media service providers (55 per cent) and knowledge-intensive service providers (45 per cent). Almost 60 per cent of companies in the information economy expect that the Internet will continue to become more important to their success through 2014, while only a little over five per cent anticipate that the Internet will decline in importance. More than half of the surveyed companies anticipate that further increase in Internet use will result in more efficient collaboration with customers and external partners as well as improved management of information and knowledge. About one quarter of those surveyed indicated that the Internet had an important role in securing new domestic markets and customer groups and for developing new products and services. By contrast, they accorded very little value to the Internet as a means of securing new international markets and customer groups or improving their energy efficiency.

1] THE SIGNIFICANCE OF THE INTERNET FOR BUSINESS PERFORMANCE

Current

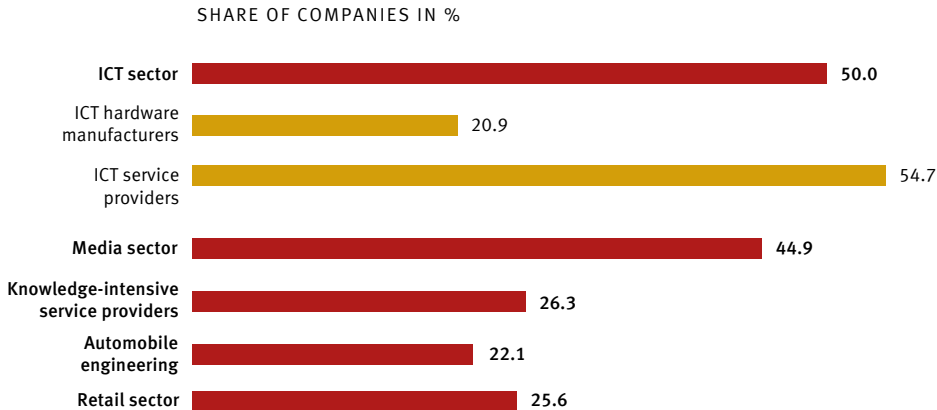


Through the end of 2014



Currently, 50.7 per cent of companies in the information economy consider the Internet as absolutely necessary for their success. Of the firms surveyed, 35.7 per cent of the companies anticipate an increase in the importance of the Internet for their success through 2014, and 23.7 per cent expect a sharp increase. Source: ZEW

2] USE OF CLOUD COMPUTING

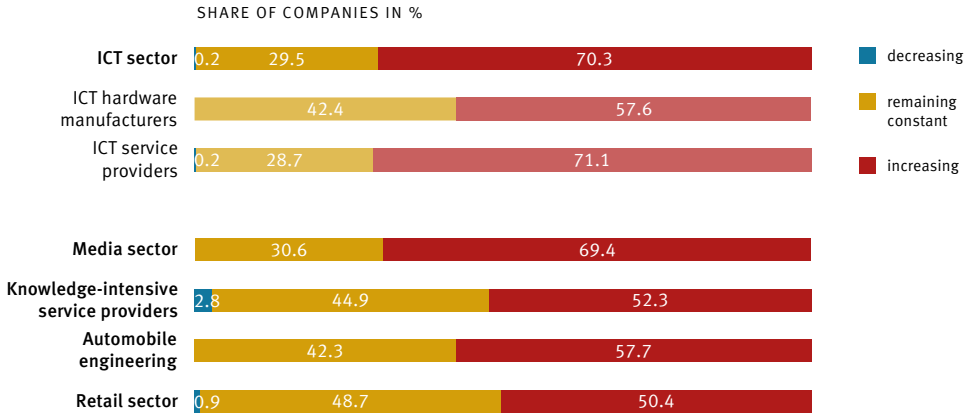


Across the ICT sector as a whole, 50 per cent of companies currently use cloud computing solutions. Cloud computing is used far less frequently by the sub-sector of ICT hardware manufacturers (only 21 per cent) than by ICT service companies (55 per cent).
Source: ZEW

Cloud computing is often spoken of as a major upcoming trend in the Internet-based economy over the next years. Cloud computing refers to procuring those IT services through a network (such as the Internet) that were previously conducted using hardware on site. Such services may include computational and storage capacity (“infrastructure as a service”), software (“software as a service”) and platforms for developing and offering one’s own services (“platform as a service”). A 2012 survey conducted as part of the “Business Survey in the Information Economy” shows that cloud computing is already in widespread use by companies in the ICT sector, with a usage rate of 50 per cent (Figure 2). ICT service providers are among the more intensive users of cloud computing, with a usage rate of 55 per cent. However, among hardware manufacturers, the rate of use is much lower, at only 21 per cent.

In the future, the use of cloud computing in companies will continue to become more significant. Across all the sectors participating in the survey, existing users indicated that they plan to continue or intensify their use of cloud computing through 2014 (Figure 3). Companies in the media sector, in particular (69 per cent), and ICT service providers (71 per cent) anticipate that they will ramp up their use of cloud computing. Among users surveyed in the automobile industry and ICT hardware manufacturers, 58 per cent of companies would like to accelerate their use of cloud computing solutions. About half of the companies in the knowledge-intensive service and retail sectors anticipate more intensive use of cloud computing than before.

3] FUTURE USE OF CLOUD COMPUTING



Some 70 per cent of companies in the ICT sector already using cloud computing plan to increase their use by the end of 2014. About 30 per cent of companies in this sector anticipate no change in the intensity of their use of cloud computing through the end of 2014.

Source: ZEW

RESEARCH AREA: ICT, MARKETS AND CORPORATE STRATEGIES

- Productivity and Innovation
- Internationalisation and Outsourcing
- Enterprise 2.0
- Online Markets
- Aspects of Competition Economics

In a knowledge-based economy, new ICT applications represent a key tool for enabling firms to respond to competitive pressures resulting from increasing internationalisation, an unstable economic environment, and changing demand conditions. In the research area “ICT, Markets and Corporate Strategies”, economists study the motivations for and impacts of ICT use, as well as complementary business strategies, such as outsourcing and IT consulting.

A study that was part of the EU project INDICSER (Indicators for Evaluating International Performance in Service Sectors) examined ICT intensity and the volatility of value-added creation per employee at the sectoral level. The economics literature has shown that the introduction of new information and communication technologies increases the volatility of productivity at the sectoral level. At first, the introduction of new ICT technology may be associated with substantial adjustment costs, which lead to a short-term decrease in productivity. Only in the medium-term, productivity begins to increase. Moreover, the use of new technologies frequently represents a

risk for firms, and, for some, can end up being a bad investment. We examined whether the observed volatility is greater for those sectors that are more tightly linked to other sectors through supply relationships. The study was based on data for selected European nations collected between 1995 and 2006 in the EU KLEMS database. The findings show that the impact of ICT on volatility in productivity at the sectoral level is greater if a sector has extensive interrelationships with other sectors.

As part of a SEEK project undertaken in collaboration with the ZEW Research Group “Growth and Business Cycles”, the Netherlands Bureau for Economic Policy Analysis, and the University of Maastricht, researchers in the area investigated the impacts of ICT intensity and presence on international markets on corporate productivity. Using data from the “ZEW ICT Survey 2010: Adoption and Use of Information and Communication Technologies”, researchers developed a ranking of corporate productivity that confirmed a very recently formulated theoretical model concerning international trade with heterogeneous firms and technologies: technology-intensive firms that are engaged in exporting their products, and are thus active on international markets, are more productive than exporters that are less technology-intensive. Firms with lower technology intensity that only sell on the domestic market constitute the least productive group. The more ICT-intensive and internationally engaged a firm’s production activity becomes, the greater its performance capacity.

As part of a project titled “The impact of service sector innovation and internationalisation on growth and productivity” (SERVICEGAP), researchers in the area have used data from the same ICT survey to examine the role of computer technology as a determinant in the international fragmentation of value-added chains. Advances in computer technology can help to reduce coordination costs for the international outsourcing of intermediary products and services. More specifically, a number of services previously considered impossible to outsource have now become outsourceable through the Internet. Empirical analysis confirmed the importance of software for coordinating supplier relationships: firms that use software for planning and managing their choice of suppliers, for procurement, and for general logistical tasks are likelier to outsource intermediate products and services than firms that do not make use of such software.

RESEARCH AREA: DIGITAL NETWORKS AND KNOWLEDGE ACQUISITION

- Social Networks
- User-Generated Content
- Education and Digital Media
- ICT-Skills and Workplace Organisation

Economists in the research area of “digital networks and knowledge acquisition” study the use of ICT by individuals for education, work, and private activities. The continuous advancement of technologies for information processing and communication necessitates the on-going adaptation of skills on the part of individual users as well as the adaptation of workplace organisation

on the part of firms. At the same time, new technology provides new opportunities for the exchange of information and acquisition of knowledge (for example, through online forums and digital networks). In this connection, economists in this research area study the motivations for and the impacts of activities by Internet users as well as the dynamics of digital networks.

A SEEK project undertaken in collaboration with Copenhagen Business School and the University of Texas in Arlington, US, examined the ways that members of “Raptr”, an online platform for playing computer games, established social networks with each other by selecting other members to be their “friends” on this platform. As members of Raptr were observed over time, the researchers were able to examine their preferences in relation to the computer games as independent determinants. Preferences according to the genre of games preferred, the preferred game platform, and how much time members spent playing online were measured. In addition, researchers could quantify the social proximity between two members who had not yet become “friends” as the shortest connection between them through common friends. The empirical analyses show that at any given time, social proximity and similarity of preferences have mutually enhancing effects that increase the probability of forming a friendship connection. Over time, however, members tend to diversify their circle of friends and form connections with members who have not previously been in their immediate network and who exhibit quite different preferences.

Within the Tübingen ScienceCampus “Informational Environments”, a large-scale interdisciplinary project, the Research Group is continuing its work on a study about the determinants of content generation on Wikipedia. The study is being undertaken in partnership with the Knowledge Media Research Center (KMRC) Tübingen and with the Department of Computer Science at the University of Tübingen. From an economic perspective, the online open-access encyclopaedia Wikipedia is a prototypical example of “peer production” of a public good without remuneration. This form of production, where multiple producers contribute small fragments to create a final product, has become widespread on the Internet. Since such production is not governed by market signals or hierarchical decision processes, it is important for platform administrators to understand how collaborators decide what to contribute. The project team has studied how decisions about the organisation of content are coordinated. Hyperlinks constitute an important organisational principle in Wikis, as they enable users to navigate from one article to another. The researchers investigated the relationship between the hyperlink network and article length as well as contributions to an existing article by new authors. On a weekly basis from 2008 to 2010, they observed a database containing more than 20,000 German-language Wikipedia pages in the categories of economics and sociology, which formed the basis for the analysis. The researchers demonstrated a significant association between the occurrence of new links pointing to an article and the growth of that article. This association is more robust for links belonging to the categories under observation than for links to the article stemming from other categories. In about half the cases, the increased length of the articles was related to contributions from new authors. The analysis showed an especially large effect when a link was made to an article that had no previous links within the categories.

OUTLOOK

In coming years, the agenda of the Research Group will be shaped by a number of activities, including the observation and analysis of the information economy and, as a new research topic, the analysis of innovation in the cultural and creative industries. Beyond these specific sectors, researchers will be examining the importance of intangible capital such as business organisation, firm reputation, and innovative knowledge for ICT-intensive production. A further focus of interest will be the analysis of social media in the context of business organisation and open-source collaboration.

» ENSURING PROSPERITY AND GROWTH IN EUROPE.



Prof. Dr. Clemens Fuest
Head of the Research Group
Growth and Business Cycles





macro economics

RESEARCH GROUP GROWTH AND BUSINESS CYCLES



Prof. Dr. Clemens Fuest
Head of Group
(since March 2013)



Dr. Marcus Kappler
Deputy

RESEARCH AREAS

- **Analysis of Long-Term Macroeconomic Relationships**
Contact: Dr. Marcus Kappler
- **Analysis of Short-Term Macroeconomic Relationships**
Contact: Dr. Marcus Kappler, Dr. Atilim Seymen
- **Development of Analytic Tools and Methods**
Contact: Dr. Atilim Seymen

MISSION STATEMENT

ZEW's macroeconomic expertise is concentrated in this Research Group, which studies how political, institutional, and global economic factors affect growth and business cycles in Germany and Europe. In addition to coordinating all cross-unit research projects with a macroeconomic focus, this Research Group informs the media and the broader public on questions related to global macroeconomic developments and economic policy.



This Research Group focuses on the long-term economic development of commodity and labour markets. It studies factors affecting potential output as well as long-term trends in the labour markets of advanced economies using country-specific indicators and statistics. In order to stimulate discussion and generate policy recommendations, the work of the Research Group also addresses the effects of globalisation on growth and employment.

Macroeconomic interdependencies between advanced and emerging countries are changing due to increasing trade and investment ties, and this has repercussions on the transmission of global business cycles. Studying such processes is an additional focus of the Research Group's activities. Recent studies have investigated the connection between financial market stress and activity in the real economy. In contrast with the other ZEW research units, the "Growth and Business Cycles" Research Group takes a primarily macroeconomic approach. It assists public institutions in Germany and Europe as well as industry players by providing data, analyses, and forecasts regarding macroeconomic challenges with a regional, national, and global scope.

Together with the University of Mannheim, the Research Group organised a third international conference titled "New Macroeconomic Developments" in 2012. The goal of this conference series is to provide a forum for professionals to exchange ideas and engage in debate about current issues in macroeconomic research. Keynote speakers Professor Jean Pisani-Ferry (University of Paris-Dauphine and director of the Belgian think tank Bruegel) and Professor Volker Wieland (Goethe University Frankfurt) were the highlights of a programme featuring a range of specialised presentations on labour market, fiscal and monetary policy issues.

RESEARCH AREA: ANALYSIS OF LONG-TERM MACROECONOMIC RELATIONSHIPS

- Determinants of the Potential Output of Industrialised Countries
- Macroeconomic Effects of Demographic Change
- Impact of Institutional Reforms on Growth and Employment
- Effects of Globalisation on Employment and Income Distribution

This research area studies the long-term growth potential and labour market prospects of national economies. In this research, institutional regimes as well as labour and commodity market mechanisms are of key importance. Researchers in this area also conduct quantitative assessments of the macroeconomic consequences of demographic change.

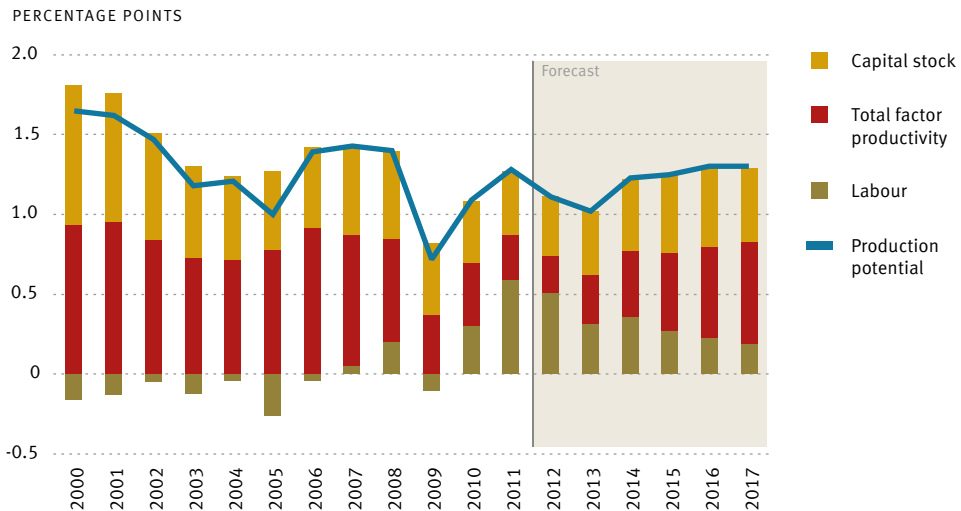
The researchers in this area have developed specialised expertise in producing studies and estimates of potential output, as well as in evaluating medium-term macroeconomic projections. Relying on this expertise, since autumn of 2010 they have contributed to the biannual Joint Economic Assessment that is produced by the leading German-speaking economic research institutes. The Research Group cooperates with the University of Kiel's Institute for the World Economy on this renowned, government-commissioned project. Within the consortium, ZEW is responsible for estimating potential output based on medium-term projections for Germany. These projections are critical for national medium-term planning and for the development of the German federal government's stability programme. The models used for estimating potential output are also used frequently on commissioned research projects. They were applied, for example, on a project contracted in 2012 by the German Ministry for Labour and Social Affairs assessing the long-term effects on growth of policies designed to safeguard Germany's supply of skilled labour. Sector-specific versions of these models will be developed in the future to provide more detailed analyses of sector-specific productivity gains.

The Research Group completed two projects this year studying the relationship between demographics and macroeconomic trends. It plans to continue work in this area in 2013, and has applied for additional research funding from the Fritz Thyssen Foundation. A particular focus of the research will be on the short-term effects of demographic indicators on business cycles.

Funded by the European Commission's Seventh Framework Programme, the project "Welfare, Wealth, and Work – Towards a New Growth Path for Europe" is currently investigating relationships between institutional factors. The Research Group is a member of the project's central steering committee, playing a leading organisational role. It also leads one of the project's five major research areas: "Governance Structures and Institutions at the European Level". This research is expected to yield valuable insights on the necessity for coordinated policy action in the EU, and the ways it can be achieved. The funding spread over the project's four-year span will give ZEW a chance to spotlight its activities in the highly competitive research environment, both at home and abroad. In addition, the international character of the project should serve to further raise the Research Group's prominence both in Germany and internationally.

Since 2012 the Research Group has been participating in the international cooperative project "e-Frame". The goal of the project is to generate scientific insights that support the implementation of the European Commission's "Europe 2020" strategy. Instead of focusing solely on economic

1] PRODUCTION POTENTIAL AND GROWTH FACTORS IN GERMANY



Production potential: change versus previous year in per cent; Factors: contribution to growth in percentage points.
Source: Federal Statistical Office; joint calculations and projections by IfW and ZEW

growth, the project also assesses and refines indicators for evaluating people's long-term welfare. This network project is funded under the European Commission's Seventh Framework Programme.

The Research Group is also being funded by the SEEK programme to study how globalisation is generating new competitive advantages for Europe's national economies, as well as how relative labour demand brings forth macroeconomic shifts. As a result of globalisation, for example, there has been a measurable increase in the role of interactive and creative work. Changes in conditions caused by offshoring – that is, moving work processes outside the country – also affect many parameters that are crucial for macroeconomic modelling. In another research project, for example, it was empirically demonstrated that in the long term, the increased offshoring of activities leads to a fall in the risk of fluctuations in industrial employee income. This phenomenon could be the result of companies' offshoring especially volatile parts of the production chain for – institutionally determined – cost reasons.

RESEARCH AREA: ANALYSIS OF SHORT-TERM MACROECONOMIC RELATIONSHIPS

- Synchronisation and Convergence of International Business Cycles
- Origin and Transmission of Business Cycle Shocks
- International Investment Ties and the Business Cycle
- Financial Market Stress and Macroeconomic Developments

This research area studies temporary fluctuations in capacity utilization in commodity and labour markets. The estimation and impact assessment of business cycle shocks play a key role in this regard, particularly in relation to global and country-specific events. Detailed sector-specific models are used to conduct this research, especially in commissioned projects.

The investigation of the role of sector-specific news shocks is an integral aspect of the research conducted in this area. An additional topic of study is how shocks affect the confidence of individual economic actors in future macroeconomic developments, and how this could be an important driver of business cycles. The Research Group previously addressed this topic in another project, entitled „Anticipated Technology Shocks in the European Economies”, which was carried out together with Professor Paul Beaudry of the University of British Columbia and Professor Franck Portier of the University of Toulouse. This SEEK-funded project additionally examined the value of existing empirical methods for measuring news shocks. Furthermore, a database of sector-specific data was created for the project in order to study sector-specific news shocks.

The determinants of business cycle synchronisation are another topic of study in this research area. A particular emphasis here is on the role of foreign direct investment, which has become extremely significant in the last decade. The research for this project was financed in 2012 with basic funding from the government, and then continued within the European Commission’s “Welfare, Wealth, and Work – Towards a New Growth Path for Europe” project.

Since 2012, another SEEK project has been examining the relationships between financial market stress and economic development in eurozone countries. Despite the grave economic and political consequences of financial crises, the relationship between the financial sector and macroeconomic developments has not yet been adequately researched. The Research Group is studying the reciprocal relationship between recessions and financial market stress, as well as the significance of heterogeneity among eurozone countries. The goal is to better understand the consequences of the inadequate integration of Europe’s economy. The project is also an opportunity for the Research Group to establish itself in a field of study that is extremely relevant today, and to develop its international contacts.

RESEARCH AREA: DEVELOPMENT OF ANALYTIC TOOLS AND METHODS

- Methods for Assessing Potential Output
- Macroeconomic Multi-Country Models
- Non-Linear Time-Series Tools

In the period covered by this report, activities in this research area focused on the further development and refinement of macroeconomic multi-country models. The models were used to study the transmission of business cycle shocks, with an emphasis on effects in eurozone countries. In this area, the Research Group develops and refines methods that are particularly useful in producing the Joint Economic Assessment's medium-term projections. Of particular relevance is the method employed by the European Commission for the EU's Stability and Growth Pact. The same method will also be used to determine the cyclical components of the German federal budget (in the context of implementing ratified debt limits). The Research Group's contribution in this area is to further refine existing methods by developing additional sector-specific productivity models. Another area of research is focused on evaluating and expanding non-linear time-series analysis tools. Such tools are currently being used to analyse the relationships between financial markets and the real economy. Other potential applications for these tools include studying macroeconomic imbalances. Current account imbalances and exploding national debt are just two examples familiar from recent debates. The Research Group plans to use non-linear time-series analysis tools to a greater extent in its future research, particularly models with time-varying coefficients. These models may prove more effective for understanding macroeconomic dynamics than standard models, because they explicitly take into account changes in the size of shocks, as well as changes in the transmission channels of exogenous shocks. Finally, the Research Group has gained extensive experience in compiling large macroeconomic datasets, both in the SEEK project titled "Anticipated Technology Shocks in the European Economies" as well as in policy advising projects for BASF SE and Evonik Industries. This area of activities is additionally concerned with automating the creation, maintenance, and updating of these datasets.

OUTLOOK

The Research Group's agenda is focused on analysing economic developments in commodity and labour markets. European institutions, market mechanisms, and the short- and long-term determinants of macroeconomic trends are extremely important in this regard. With its findings, the Research Group aims to improve the coordination of macroeconomic policy at the EU level, and to make it more consistent. In addition, the Research Group is focused on finding new approaches to understanding globalisation and its effects on economic growth and employment. The key aim is to identify relevant developments early on and to debate potential policy responses. An additional subject of research is the relationship between the financial sector and macroeconomic developments, particularly in times of crisis.

» OPEN MARKETS AND FAIR COMPETITION.



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





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Prof. Dr. Kai Hüschelrath
Head of Group

RESEARCH AREAS

- **Competitive Strategy and Competition Policy**
Contact: Prof. Dr. Kai Hüschelrath
- **Competition and Regulation in Network Industries**
Contact: Dominik Schober

MISSION STATEMENT

The Research Group “Competition and Regulation” studies competition policy and strategy as well as competition and regulation in network industries. Interdisciplinary collaboration with legal and business scholars is particularly important in the Research Group’s activities. The goal of this collaboration is to improve the preconditions for evidence-based competition and regulatory policies.

The Research Group’s approach systematically takes into account incentives created by laws and law enforcement, as well as the strategic behaviour of firms. Accounting for these factors necessitates a variety of activities: the assessment of the status quo, including market studies and economic investigations of legal practice; the analysis of incentives arising from existing legislation, including comparisons between laws and institutions; and the examination of effects on firm behaviour. 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

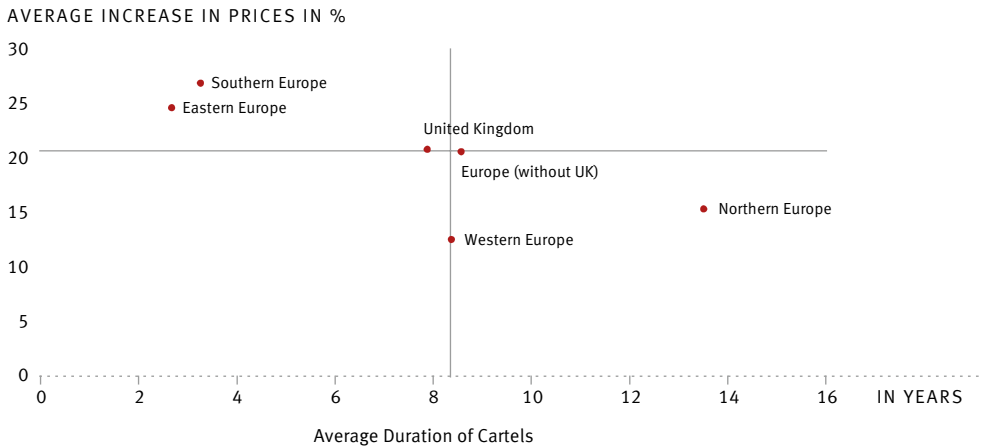
- Analysis of Mergers and M&A Trends
- Public and Private Enforcement of Competition Law
- Evaluation of Competition Policy Institutions and Rules
- Industry Studies

In this research area, ZEW economists study how firms gain, defend, and expand competitive advantage on the market. The results are used to assess the microeconomic effects of firm behaviour, and draw conclusions regarding competition policy. Competition strategy and policy influence one another in many ways, and both are affected by existing regulations in competition law. Against this backdrop, the Research Group studies the overlap between economics and business with law, applying both theoretical and empirical methods. The goal is to generate novel insights by combining and expanding expertise in both areas. Particular emphasis is placed on assessing the welfare effects of mergers, and on studying coordination between firms in making production and sales decisions.

In a project devoted to studying the public and private enforcement of antitrust law, ZEW researchers are investigating the influence of various cartel characteristics and the market environment on the level of price increases caused by cartels. A related area of research studies whether fines set by current European guidelines are sufficient to discourage cartelisation. Research has shown that international cartels cause greater price increases than domestic cartels,

and that cartel experience gained from repeated attempts to fix prices has a negative effect on the level of price increases. Another interesting conclusion reached by the study is that the average duration of a cartel, as well as the price increases achieved by a cartel, differs significantly among certain countries in Europe. In addition, a comparison of the price increases caused by cartels with the fine amounts set by current European guidelines showed that for most companies, forming cartels was in retrospect a profitable business. Cartel profits exceeded the fines paid in 67 per cent of the cases, even though the calculations used the current maximum fines and high numbers for the probability that the cartel would be exposed.

1] AVERAGE CARTEL DURATION AND PRICE INCREASES IN VARIOUS REGIONS IN EUROPE



The graph shows the average increase in prices and the average duration of cartels in various regions in Europe. Whereas cartels in Eastern and Southern Europe achieved the highest increase in prices (24.67 and 26.94% of market prices), the duration of cartels is the shortest in these two regions (2.67 and 3.26 years). In Northern Europe, cartels have the longest average duration (13.51 years) and achieve the second lowest increase in prices (15.36%).

In the scope of an on-going project titled “The Evaluation of Competition Policy Institutions and Rules”, ZEW researchers examined how a firm’s acquisition of a passive ownership stake in a supplier affects retail prices. Two specific effects were identified using an industrial economic model. On the one hand, there was a rebate effect. The purchasing company got some of the money back it paid for the supplier’s product in the form of profit participation. But the supplier compensated for this effect by increasing the price at which it sold its products to the purchasing company, so that the effective purchasing price remained the same as the price on the international market. On the other hand, reverse profit participation had an effect on coordination. Through the supplier’s profits, the purchasing company now participates in the profits of its com-

petitors on the downstream market. If the purchasing company increases its price, some of its customers will take their business to competing companies purchasing from the supplier. Thus, reverse profit participation makes raising prices more profitable for the purchasing company. By raising its price it triggers a price spiral, because the other companies purchasing from the supplier then also have the capacity to raise prices. The opposite effect is observed when a downstream company merges with a supplier into a single company: retail prices fall. So passive reverse profit participation raises retail prices, and vertical mergers lower them. For the consumer, a merger may be better than passive profit participation. Competition authorities should therefore think twice before they cite “competitive reasons” when requiring an application for a controlling interest to take the form of passive reverse profit participation.

RESEARCH AREA: COMPETITION AND REGULATION IN NETWORK INDUSTRIES

- Trends in Energy, Telecommunication and Transport Markets
- Development and Evaluation of Market Designs, Network Regulations and Energy Policy Instruments
- Impact of Market and Ownership Structures on Competition and the Behaviour of Market Actors

In addition to the design of effective and efficient regulatory schemes, economists in this research area study how energy companies’ ownership structures and strategic behaviour impact retail and wholesale markets for electricity and natural gas. Increasingly, an emphasis is being placed on questions surrounding the integration of energy markets across Europe and the effort to transition to renewables. In particular, researchers are studying investment incentives for market actors to replace or expand infrastructure components, as well as the structure and design of balancing energy markets. Transport markets are an additional subject of study in this research area alongside energy markets. For example, the Research Group has investigated the evolution of competition in rail and aviation markets.

Within the scope of a project titled “Effects of Market and Ownership Structures on Competition and the Behaviour of Market Actors”, researchers analysed how ownership ties between gas importers and dominant retail suppliers impacted new competitors entering the market. Vertically integrated companies have an incentive to prevent competitors from entering the market, because they increase retail competition. The analysis was prompted by the observation that in comparison with the electricity market, the number of new competitors entering the gas market in the years since it was liberalised has been very small.

To empirically study this question, cross-sectional data from a variety of sources for approximately 500 markets from the year 2009 were analysed. The data contained information about ownership structures, new competitors on the market, as well as market and customer characteristics. The results indicate that vertical integration had no significant negative effect on new competitors entering the market. The German competition authority’s decision in 2010 to lift the

ban on integration imposed in 2006 was therefore sound from an economic point of view. But the results also indicate that fewer new competitors entered markets with particular characteristics. Future research will explore the causes of this phenomenon.

In the area of aviation market competition, a variety of the Research Group's projects have studied how market exits caused by bankruptcy differ in terms of price and volume effects from those caused by corporate takeovers. Using various panel data models with fixed effects, it was determined that market exits caused by bankruptcy led to permanent and substantially higher price increases (averaging twelve per cent) than those caused by corporate takeovers. Within the category of market exits caused by corporate takeovers, the study showed that prices rose on average six per cent in the short term in overlapping markets, but rose only on average three per cent on routes where the airline changed because of a corporate takeover. Corroborating these results, a large reduction in capacity was found when bankruptcy caused a market exit, and a rather moderate reduction when a corporate takeover was the cause. In another project dealing with the aviation sector, the Research Group investigated what benefits the appearance of a new low-cost airline on the market had for consumers. Although the highest percentages in price reductions were observed in monopoly markets, the project determined that the highest absolute increases in consumer benefit were triggered by the appearance of a further competitor in already oligopolistic markets.

OUTLOOK

The founding of the Leibniz ScienceCampus "Mannheim Centre for Competition and Innovation" (MaCCI) in 2012 expanded and consolidated the "Competition and Regulation" Research Group's already close collaboration with the School of Law and Economics at the University of Mannheim. This collaboration will be strengthened even further in the coming years.

The Research Group's activities will continue to be guided by the research topics defined by MaCCI. Within the "Public and Private Enforcement of Competition Law" project, researchers will study how competition law can best be enforced. Emphasis will be placed on analysing specific aspects from a legal and economic point of view, such as the calculation of optimal fine levels and the reliable assessment of the damages caused by competition infringements. In particular, the Research Group will make an effort to develop implementable standards – especially in terms of the private law enforcement of competition law – that take into account legal requirements, but are also guided by robust findings in economic research.

Within a project titled the "Evaluation of Competition Policy Institutions and Rules", the Research Group will continue to study selected competition rules and institutions from a legal and economic point of view, and then evaluate them using econometric methods in terms of their effects on competition. The goal here is to identify how these rules and institutions could be reformed and produce recommendations for improvement.

Within the research area "trends in energy, telecommunication and transport markets", a focus will be placed on advancing various subprojects concerned with energy markets. The Research

Group will study, for example, how the adoption of renewables on both the producer and consumer side will affect supply security in the short and long term (in terms of investment incentives), and what regulatory instruments are appropriate for promoting the desired developments.

SCIENTIFIC OUTPUT, COMMITTEES AND EXTERNAL RELATIONS

▶ SCIENTIFIC OUTPUT

▶ COMMITTEES AND EXTERNAL RELATIONS

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The association funds new research projects at ZEW, and it provides a platform for exchange between the worlds of business, politics, and academia. All parties involved benefit from the network: firms receive scientifically grounded expertise on economic issues, and researchers at ZEW stay in close contact with practitioners and political decision-makers.

Members of the ZEW Sponsors' Association for Science and Practice are being invited to major events at the institute featuring prominent speakers from the spheres of politics, society, and science.

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- Winker, P., Justus Liebig University Giessen
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- Yinghua, Z., Jiangsu Yangnong Chemical Group Co., Ltd., Yangnong, CN
- Zhengqi, L., Beijing Research Institute of Chemical Industry, Beijing, CN
- Zhuang, M., Bank of England, London, UK



The ZEW alumni meet on the occasion of the 2012 ZEW Economic Forum

ZEW ALUMNI

The ZEW alumni network provides a forum for former ZEW staff to stay in touch with colleagues and with the institute. ZEW keeps alumni posted on news about the institute, so they are always informed about the latest research results and professional training seminars. Moreover, former staff can provide ZEW with valuable input for research work. ZEW alumni traditionally meet once a year on the occasion of the ZEW Economic Forum.

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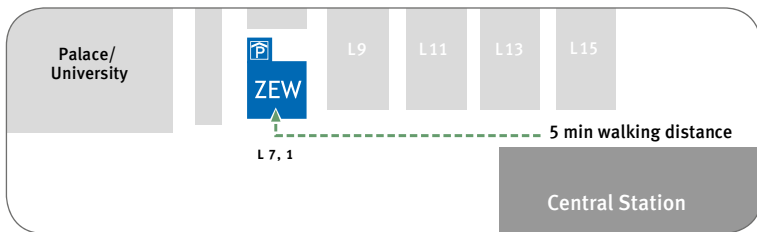
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By foot from Mannheim Central Station

It is a five-minute walk from Mannheim Central Station to ZEW.

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