

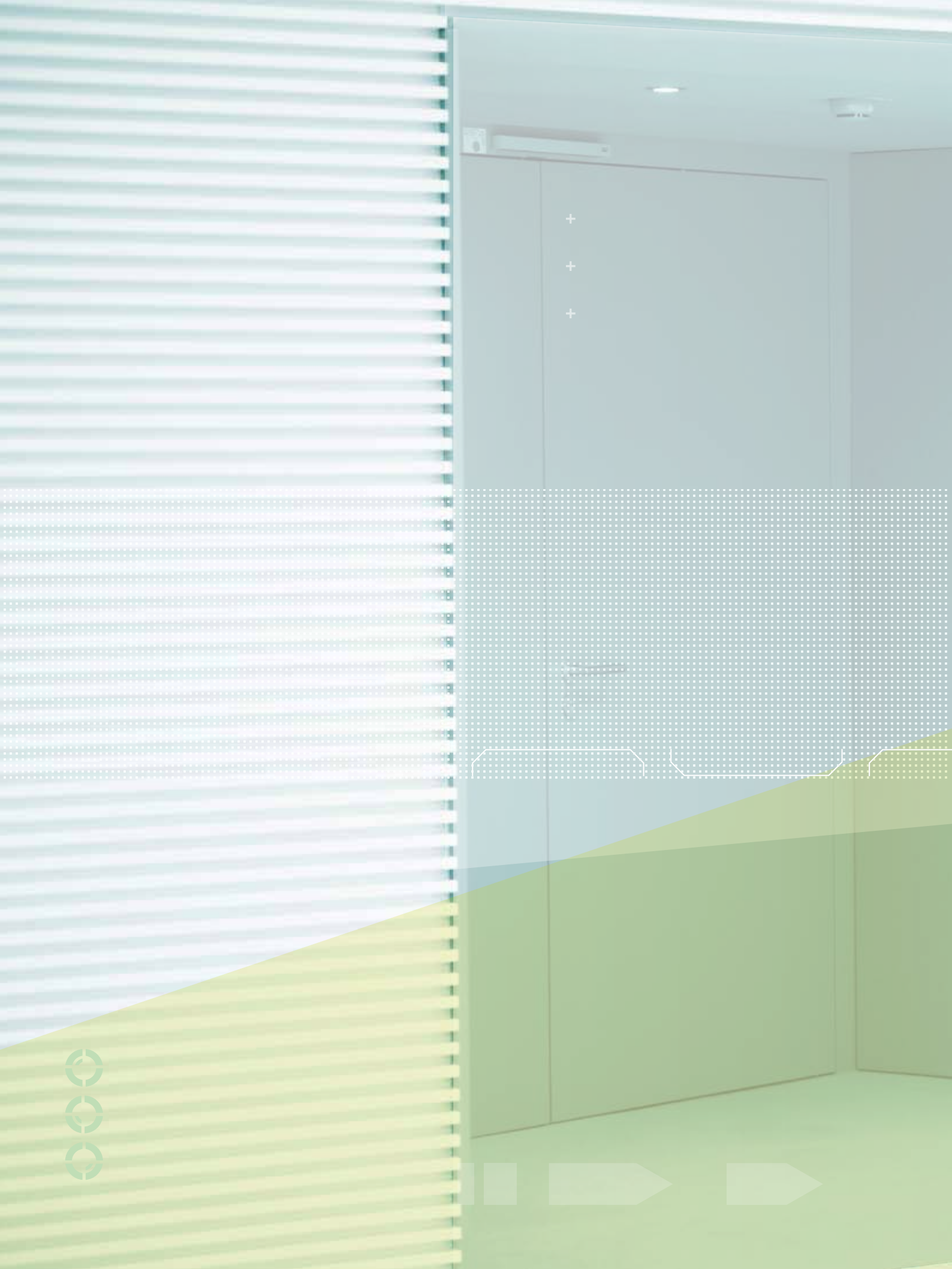
ZEW

DIGITALISATION

ANNUAL REPORT 2018

ZEW ANNUAL REPORT 2018






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Dear readers,

This year's Annual Report has a completely updated design. The new format tightens the focus on content while employing an innovative visual layout. We hope you like the new look of the report as much as we do. We would like to express our appreciation to all ZEW team members who worked on making the report so attractive and innovatively informative.

This Annual Report puts the spotlight on a particularly relevant topic today: digitalisation. Across the world, economies and societies are at a crossroads. As a significant driver of innovation, digitalisation is changing production and work processes as well as creating new business models. To ensure growth and prosperity in Germany and Europe, the active management of processes surrounding digitalisation is crucial. ZEW has committed itself to taking on this challenge – as demonstrated by the activities highlighted in this report.

In addition to shedding light on important issues such as the energy transition, demographic change, and European integration, ZEW places a major focus on studying economic development in Germany and the EU. The key findings of our research in these areas are illustrated in this report with the aid of informative graphics.

ZEW is also growing in innovative directions to perform its mission better. The strategic expansion of the institute into a centre of expertise for market and institutional design is well on its way. ZEW plans to make market design an important focus of its research units. As part of this initiative, new junior research groups dedicated to the topic will be formed.



Prof. Achim Wambach, PhD
President



Thomas Kohl
Director

Together with this new strategic initiative, the institute has officially changed its name to “ZEW – Leibniz Centre for European Economic Research” at the start of 2019. The new name puts a stronger emphasis on our brand, “ZEW”. The new name also highlights our affiliation with the Leibniz Association, one of the most prestigious research organisations in Germany.

2018 also saw the arrival of two new research department heads at ZEW. Dr. Tabea Bucher-Koenen was brought on as head of “International Finance and Financial Management”. Professor Sebastian Sieglösch now heads the new Department of “Social Policy and Redistribution”. These two distinguished experts will provide new impetus to our research endeavours.

We hope you find this report stimulating and thought-provoking.

Prof. Achim Wambach, PhD
President

Thomas Kohl
Director



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DIGITALISATION

Focus Topic

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// Prof. Dr. Irene Bertschek

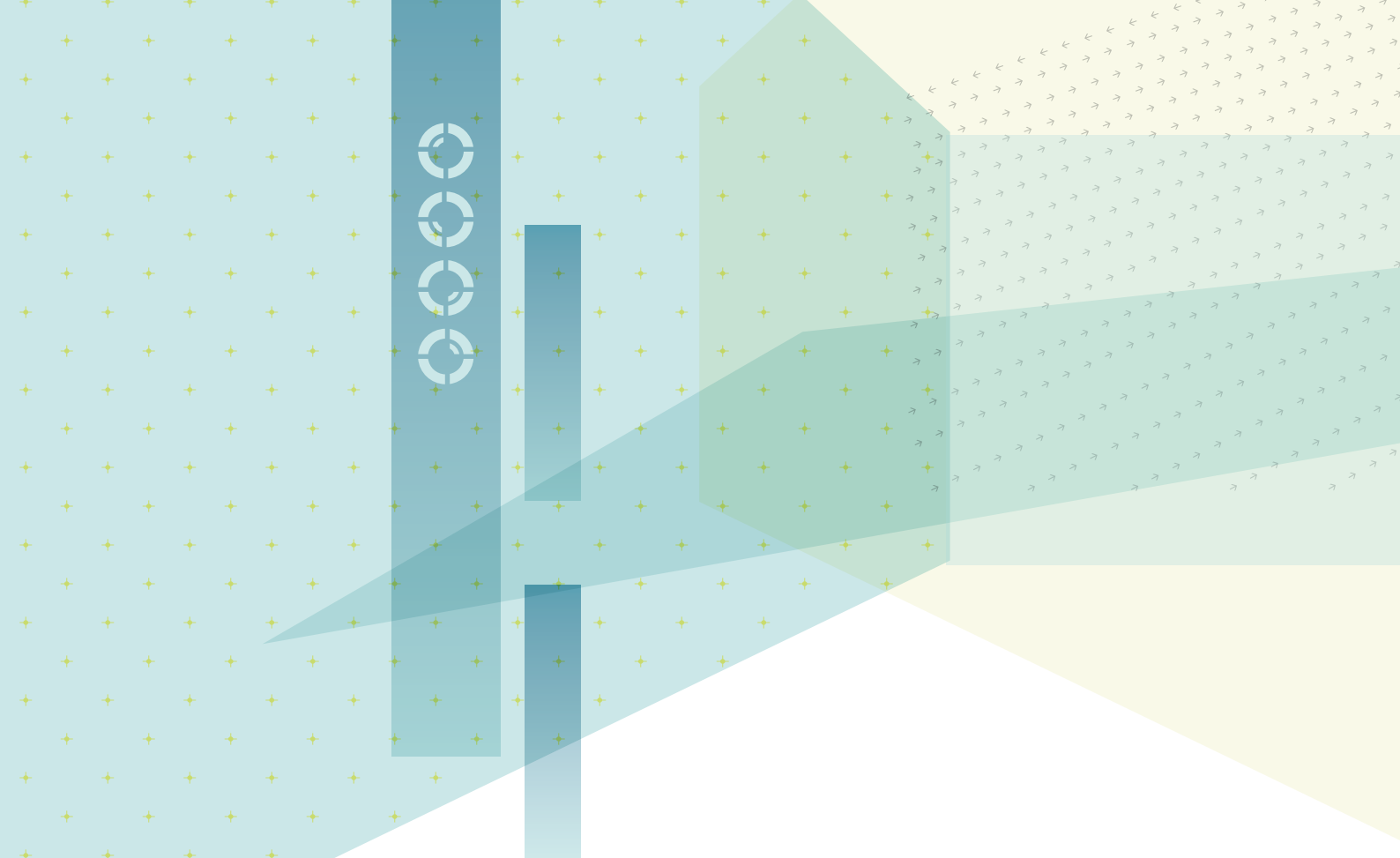
Irene Bertschek is head of the ZEW Research Department “Digital Economy” and Professor of the Economics of Digitalisation at the University of Giessen. She studied economics at the University of Mannheim and at the Université catholique de Louvain in Belgium, where she received her doctorate. She studies how digitalisation changes economic processes as well as its effects on corporate productivity and innovation behaviour.

How the Digital Transformation Is Remaking Our Economy

Interview with Prof. Dr. Irene Bertschek

Head of the Research Department “Digital Economy”

Today, digitalisation is everywhere. From cloud solutions to manufacturing software and online platforms offering accommodations, music, and other products, the digital transformation is here to stay. And that brings changes with it.



ZEW has studied the economic aspects of digitalisation in depth. What areas of research interest you the most?

ZEW recognised the importance of information and communication technologies very early. The “Digital Economy” Research Department was formed in 2001 to study the effects of these technologies. We investigate various questions, such as whether the use of digital solutions makes companies more innovative and productive. Why are some companies and industries better at exploiting digitalisation to their benefit than others? We are also interested in the role of robots and assistance systems.

In contrast to industrial robots, is it accurate to say that service robots have been less readily embraced by the German economy?

Currently, that is certainly true. The primary reason is that many companies don’t understand how robotics can be useful in the area of customer services. They also assume that their customers would prefer not to be served by digital assistant systems. But artificial intelligence can play a critical role in service robotics. Robots that provide services can learn from experience and process new information. They then become smarter, more efficient, and more dependable on the job. Improvements in technology, demographic changes, and the introduction of digital voice interaction assistants in private households will also definitely increase public acceptance of digital assistants.

A particularly important aspect of digitalisation is the platform economy. What effects has it had on the economy and society?

The platform economy has a number of dimensions. For example, today we often pay for services on online platforms with a new currency, our data. There is also the rise of corporate giants with significant market power such as Google, Facebook, and Amazon. And on the labour market, there are now clickworkers who work under similar conditions as day labourers in the past. Taking all of this into account, at ZEW we study how digital platforms function, whether the algorithms on these platforms favour or disadvantage particular providers and customers, how the labour market is changing, and if adequate wages can be maintained going forward.

How do you approach researching these developments?

We use quantitative methods to study these issues. We measure digitalisation and its effects on the economy. We examine data on economic sectors, companies, and workers, as well as internet-based data.

Besides other economists, for whom is your research intended?

Our evidence-based approach makes us an important research resource for Germany and Europe. For example, government ministries commission us to assess Germany's position as a digital hub. We also participate in a range of committees, providing research results and expert opinions that help shape the public debate on digitalisation as well as digital policy. This is critical, because a detailed understanding of how digitalisation influences economic processes is required to design the digital economy so that it contributes to growth and prosperity in Germany and Europe.

And what is required in Germany, according to your findings?

From an economic perspective, Germany is lagging behind in several areas. In particular, Germany needs to further expand its broadband infrastructure, to support digitalisation in small and medium-sized companies, and to promote digital skills in the workforce.

The background features a grid of small gold plus signs on a light blue and green gradient. Overlaid on this are several semi-transparent geometric shapes: a large green triangle pointing right, a blue trapezoid, and a yellow trapezoid. The overall aesthetic is modern and tech-oriented.

Digital Transformation

The digital transformation is an enormous challenge. High-speed internet, mobile devices, intelligent software algorithms and the storage and processing of large amounts of data are changing economic and social dynamics at great speeds.

Economy in Transition

Tackling the Digital Challenge in an Active and Creative Manner

*Excerpt from ZEW policy brief No. 5/May 2018
by Professor Irene Bertschek and Dr. Wolfgang Briglauer*

Digitalisation has multiple dimensions, making a successful economic and social transformation difficult. However, it also presents great opportunities.

These opportunities presented by digitalisation, such as the development of new products and services as well as increases in productivity, can only benefit society if the challenges that come with it are tackled in an active and creative manner. But especially in this area, Germany has some catching up to do. From an economic perspective, this applies in particular to the further expansion of broadband infrastructure, the support of small and medium-sized businesses with the digitalisation process and the strengthening of digital skills.

In order to remedy these deficits, it would be advisable to provide strong investment incentives on the supply side for the implementation of a nationwide gigabit network, in particular through cost-saving measures and fewer sector-specific regulations. At the same time, policies should be in place that help avoid overcapacity by incentivising consumers.

Compared with large corporations, medium-sized companies have underused digitalisation's potential for increasing productivity and innovation. The federal government must therefore make companies aware of the opportunities that come with digitalisation and provide consultation with the development of concrete implementation strategies. Financial assistance for small and medium-sized companies should be simple to access.



POLICY BRIEF

"How the Digital Transformation of the Economy Can Succeed"

<https://zew.de/PU79967-1>

Artificial Intelligence

Why It Is High Time for Europe to Wake Up

Claudia Nemat, executive board member at Deutsche Telekom responsible for technology and innovation, giving a lecture at ZEW as part of the First-Hand Information on Economic Policy series on 12 July 2018

Claudia Nemat opened her speech with the bold statement that artificial intelligence (AI) is set to fundamentally change the way we work and think. That being said, AI is still far from being the “holy grail” that can solve all our problems.

Providing an overview of the current situation, Nemat explained that this is because, up to this point, the only type of AI being implemented in practice is so-called “weak AI”, which develops algorithms based on previously supplied data. While AI applications are already capable of making decisions more quickly than the human brain or carrying out production techniques more precisely than the human hand, these applications have not yet succeeded in transferring intelligence from one specific area to another. AI that has so far been in use still does not make its own decisions when faced with uncertainty, but is rather largely a reflection of its creator. “The performance of algorithms, such as those used to recognise patterns, can only be as good as the data it has previously been fed,” Nemat pointed out. One issue that has provoked heated discussion in this context is the procurement of personal data. It is therefore necessary to find a way to make anonymised collected data accessible to companies whilst being transparent with consumers with regards to what is happening with their data. “Currently, AI is not self-aware, but is still very powerful in ways both good and bad. It is now up to us to learn how to shape AI,” said Nemat. There are currently many potential applications for this technology, particularly in the medical field, where it is already being used for the early identification of cancer cells and the diagnosis of rare diseases.

Compared to other countries, however, Germany lags far behind when it comes to further development of AI. With a total budget of five billion euros earmarked for AI research, the EU trails far behind Asia and the US, where almost double and quadruple this amount respectively is being invested in research initiatives related to AI. With this in mind, Nemat warned that Europe and Germany risk not only be-



Claudia Nemat,
Executive board member at Deutsche Telekom AG

The **DIGITAL Economy Monitoring Report 2018** focused on “Artificial Intelligence”, which is rapidly gaining in importance for a growing number of companies. The results of the survey on AI can be found on page 58 (in the Section on ZEW’s Research Department “Digital Economy”).



DOWNLOAD

DIGITAL Economy Monitoring Report 2018
(short version)
<https://www.zew.de/PU80124>

ing at a great competitive disadvantage, but also of becoming dependent on other countries. Being forced into such a subordinate position involves the risk of overly strict regulation and could therefore serve as an obstacle to future innovation. “In Germany, we have a fantastic culture of engineering, but this needs to be reinvented in the wake of AI,” said Nemat.

According to Nemat, both Germany and Europe need to set additional goals when it comes to the development and implementation of AI technology. “Networking” was the order of the day, with Nemat calling for Europe’s industries to work in closer collaboration with one another in the future. This could help to make both Germany and Europe more attractive as a business location and also to acquire more international expertise. “AI is not a single machine; rather, it consists of countless different projects both big and small. The implementation of AI therefore requires a critical mass of people – and in addition we need a talent pool with a strong network of knowledge,” explained Nemat. She concluded her speech with a call for a European global market leader in the creation of industrialised algorithms.



VIDEO

<https://www.zew.de/AM6019-1>

DIGITAL Economy Monitoring Report 2018

GERMAN ICT SECTOR BUILDS ON PREVIOUS SUCCESS

In 2017, the information and communication technology (ICT) sector in Germany managed to increase its gross value to 108 billion euros. This corresponds to a four per cent increase compared to the previous year. The number of employees subject to social insurance contributions and self-employed persons has risen to just under 1.2 million, meaning that a total of almost 250,000 new jobs have been created in the ICT sector since 2010. The German internet economy also grew in 2017. Recording an increase of around 10 billion euros, it generated a turnover of 119 billion euros. These and other findings can be found in the DIGITAL Economy Monitoring Report 2018, conducted by ZEW in collaboration with Kantar TNS on behalf of the Federal Ministry for Economic Affairs and Energy.

Gigabit Society

Ways to a Successful Transformation in Germany

*ZEW President Professor Achim Wambach, PhD
in “Der Tagesspiegel” from 14 July 2018 (short version)*

Germany risks missing out on the rapid expansion of the internet if it sticks to its current copper wire based expansion strategy, and the latest promise of a nationwide update to gigabit networks capable of speeds of 1000 Mbit/s by 2025 seems far off on the horizon. Germany currently comes in fifth from the bottom in Europe when it comes to the share of households with a fibre-optic internet connection. There are, however, a number of ways for Germany to transform into a gigabit society.

The majority of investments in broadband expansion – estimated at between 45 and 69 billion euros – will come from private providers without any public funding. Instead of forcing companies to repeatedly compete for the highest funding amounts, more energy should be invested in creating the regulatory conditions for this private expansion. In this case, flexible regulation of fibre-optic connections would certainly help, as would an antitrust ruling in favour of joint investment projects.

Alongside cable networks and fibre-optic cable, mobile communications represent the third channel through which gigabit-capable services can be provided. The frequencies for the upcoming fifth generation mobile communications standard (5G) were auctioned off in early 2019. In all market dynamics there are, however, always going to be regions where broadband expansion does not make economic sense – also known as white spots. This problem can be solved in mobile communications through specific requirements in the frequency allocation process.

In addition, the roll-out of gigabit networks should be subsidised with public funds. The new government already earmarked a funding amount of ten to twelve billion euros for this purpose in the coalition agreement. To ensure that this funding is allocated where it is most needed, it would be sensible to channel it into demand-based instruments to accompany the supply-oriented funding currently available. This could, for example, involve distributing time-limited vouchers to small and medium-sized enterprises as well as socio-economically significant institutions. This way we can ensure that the network is being expanded where demand – boosted by the vouchers – is highest.



VIDEO

<https://zew.de/AM6020-1>



Broadband Availability

How It Impacts the Online Presence of Companies

*Findings of a study by Jan Kinne and
Janna Axenbeck*

Broadband expansion in Germany is currently making only slow progress, with some regions having still no access to high-speed internet. This goes hand in hand with a lower Internet presence of German companies, since companies in regions with only limited broadband availability being considerably less likely to operate their own company website.

The ZEW study is the first of its kind to analyse the online presence and website usage of 2.1 million companies in Germany by means of a web-scraping query method developed at ZEW. The study found that whether or not firms have their own website depends primarily on company characteristics like size or business sector. Large companies in industries such as mechanical engineering are, for instance, more likely to have their own website. In addition, large companies with long-standing market experience tend to have their own websites, whereas small and new companies are less likely to maintain an online presence.

The study also indicates that there is a connection between the regional differences in the availability of broadband internet and the online presence of companies. As the study shows, companies located in regions with low broadband coverage, i.e. in municipalities where less than 75 per cent of households have access to an internet connection with a speed of at least 50 Mbit/s, are considerably less likely to operate their own websites. According to calculations by the authors of the study, this is estimated to affect approximately 30,000 companies in Germany, which corresponds to around 3.6 per cent of businesses in these municipalities.

The reluctance to set up an online presence could have a long-term negative impact on these companies, since having their own website is crucial for being able to participate in the digital market. Companies use websites, for instance, to share information about their products and services, to sell their products over the internet or to get in touch with customers. The currently slow progress made in broadband expansion seems to prevent companies from exploiting their full potential.



DISCUSSION PAPER

“Web Mining of Firm Websites: A Framework for Web Scraping and a Pilot Study for Germany”

<https://zew.de/PU80192-1>



Digital World of Work

Digitalisation is changing work processes and task profiles. While some task areas are disappearing, others, new ones are emerging. In the future, human work will be increasingly concentrated on areas that require human intelligence and creativity.

Digitalisation Creates Jobs

Targeted Support Measures for Workers Are Essential

Results from a study by Professor Melanie Arntz, Dr. Terry Gregory and Dr. Ulrich Zierahn

Digital transformation is creating more jobs than it is destroying, but still poses many challenges for establishments and workers alike. To ensure that the German economy remains competitive in this arena, the government needs to take action.

Using the results of a survey on the implementation of digital technologies in German companies as well as a model-based estimation of the relevant macroeconomic mechanisms at play, the project aimed to investigate the ways in which overall employment, unemployment and wages are responding to digitalisation in Germany. The findings demonstrate that the diffusion of digital technologies in German businesses has created more employment overall, but has led to significant changes in the employment structure.

Recent investments in these new technologies have led to a one per cent increase in employment levels between 2011 and 2016, which is equivalent to an increase of 0.2 per cent each year. Though these technologies have a labour-saving effect, up until now they have created more new jobs than they have replaced. Simulations carried out for the period 2016–2021 show that planned corporate investment in technology will raise total employment by 1.8 per cent. This is equivalent to an annual increase in employment of just under 0.4 per cent each year.

The findings also showed that investment in digital technologies are a contributing factor in rising wage inequality. High-wage professions and sectors are the ones that are profiting the most from new technologies in the form of higher employment and wage increases, while low-paid jobs and sectors, on average, are losing out.

In tackling this issue, the real challenge posed by digitalisation and “Industry 4.0” is preparing workers for the labour market of the future and in so doing improving every individual’s chance to benefit from digital transformation by moving into developing sectors and professions. The possibility for workers to move between professions and sectors should therefore be encouraged.



STUDY

“Digitalisierung und die Zukunft der Arbeit: Makroökonomische Auswirkungen auf Beschäftigung, Arbeitslosigkeit und Löhne von morgen” (in German only)

<https://zew.de/PU79892-1>

Life-Long Learning

Central Skill of the Digitalised World of the Future

Interview with ZEW labour market economist Professor Melanie Arntz

The digitisation of work has become one of the watchwords of the 21st century. As companies and markets keep up with rapid advances in the digital economy to stay competitive, sceptics fear that the automatisisation of labour will lead to massive job cuts. How realistic are such fears and what does digitisation mean for workers and businesses in Germany and in Europe in general?

How is today's labour market prepared for the changes that digitisation will bring?

The digital transition is already in full swing in many German companies, and has been accompanied by increased requirements for computer skills, process knowhow, communicative ability, and interdisciplinary knowledge. In the digital world of tomorrow, demand rises for labour force whose productivity is expected to climb as new digital technologies are deployed. The German job market is relatively well prepared for these changes and, due to the high level of qualification in Germany, many workers are already well trained to meet the increasing requirements. Moreover, German companies judge the training system to be sufficiently flexible in adjusting training contents to the needs of a digitised economy.

What does this mean for generations that have grown up in this environment and want to work?

First, skills that have a certain routine character that can be performed by algorithms will be less in demand in the future. By contrast, a communicative all-rounder who is able to apply his professional skills creatively to newly arising challenges is likely to do better. Second, the changes to the work environment will also bring with it changes to modes of working. Though crowdworking – labour that is offered digitally to companies around the globe – has so far remained a niche phenomenon, the modes of working are clearly changing and the ability to plan a career without any interruptions or ruptures is likely to decline. Third, the willingness for lifelong learning is key for being productive and successful in a constantly changing job market. And while the labour market of to-



// Prof. Dr. Melanie Arntz

Melanie Arntz is deputy head of the ZEW Research Department “Labour Markets and Human Resources” and Leibniz Professor for economics with a focus on labour economics at Heidelberg University. Her research focuses on digitalisation and its effect on employees and wages.

morrow offers more opportunities for self-fulfilment, it also has the potential to increasingly overwhelm individuals.

What can the government do to foster this process?

The government can introduce policies that prepare the German economy for the future while mitigating possible negative side-effects. On the one hand, this means investing in the digital infrastructure, in developing digital standards that foster digital interconnectivity, and in creating a clear legal framework for data protection. At the same time, the government can encourage dialogue between the private sector and educational institutions in order to spur the necessary curriculum changes. In addition, the state must identify individuals who are in danger of falling behind and equip them with the skills they need to master the digital transition. This mainly concerns low-skilled workers who take part in company training programmes far less frequently than more qualified co-workers even though the former are more likely to perform tasks that can be automated.

As far as workforce training goes – what challenges does digital work pose for companies?

The problem that many companies frequently have is recognising the chances of digitisation. Technical knowledge alone does not suffice as businesses must leave behind old ways of thinking. Once a company has successfully started the digital transition, it is important to train employees for meeting new requirements. However, digitisation is not always accompanied by greater requirements for workers. Notably, low-skilled workers sometimes find themselves faced with less demanding work. The challenge for companies lies not only in training employees but in helping them avoid the psychological stress that arises from demanding too much or demanding too little. Digitisation thus poses a multitude of challenges for companies to navigate.



STUDY

Crowdworking

A meta study of ZEW (in German only) evaluated over 100 research projects about platform-based gainful employment.

<https://zew.de/PU79648-1>

Job Hunting via Internet

A ZEW study in cooperation with IAB and the University of Bristol has shown that high-speed internet access improves the chances of unemployed people in Germany finding a job.

<https://zew.de/PU80043-1>

E-Recruitment

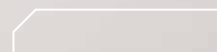
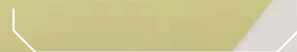
In order to attract new employees, 77 per cent of companies in the German information industry already opted for e-recruitment in 2018 by using digital tools such as online job exchanges, company websites and social media platforms. This is the finding of a representative company survey conducted by ZEW in September 2018 (in German only).

<https://zew.de/PU80309-1>



Digital Markets

Digital markets are characterised by social networks, comparison and rating sites, search engines, sharing platforms and app stores. They tend to be highly concentrated and are often dominated by a small number of suppliers like Google or Amazon. The currency in these markets is often our personal data.



Digital Versus Analogue

New Business Models Are Stirring Up Old Markets

Exposé based on the book “Digitaler Wohlstand für alle” (“Digital Prosperity for All”) by ZEW President Professor Achim Wambach and Handelsblatt editor Hans Christian Müller

Sharing rather than owning is one of the central principles of the digital market economy. With an increasing number of users, the sharing economy has a huge amount of potential, and it is just one example of how new digital business models are transforming traditional markets at a rapid rate. In many markets, we are seeing a battle of digital versus analogue. The taxi industry is having to fight for survival in the face of car-sharing platforms like Uber, while in the telecommunications sector text messaging has long since given way to the online messaging service Whatsapp.

Many of the more traditional business models seem to have been unable to keep up – and the same applies for the accompanying regulations. Governments therefore need to look closely at current market regulations and adapt them to this new digital age. The most important thing is finding the most effective way to promote competition and therefore to increase prosperity – regardless of whether the new regulations are more favourable to traditional market players or the new digital pioneers. What is needed are new, unambiguous regulatory safeguards. One of the largest and most deeply affected sectors is commerce, which is currently undergoing considerable structural changes, with many sub-sectors becoming increasingly “Amazonised”. More and more trade is being conducted online, leading to deserted high streets in many cities across the world. Even though the government is not supposed to favour one kind of business over another, they are still faced with solving a number of issues relating to competition policy. It is important that the authorities monitor the interdependencies between trading platforms and small online traders and punish any potential abuse of market power. As a regulating force, the government must ensure fairness in commerce and exploit the potential of digitalisation where it is most needed, for instance in securing the supply of medication or protecting cultural assets such as books. Stationary trade is still far from losing the battle against its online competitors, though it needs to rethink its current strategies and make buying products in-store more of an experience for consumers again.



BOOK

More information on the contents of the book can be found on the pages 30/31 of this Annual Report.

Silicon Valley

Lessons for the Digital Transformation in Germany

Event organised by ZEW and the Baden-Württemberg Ministry of Economic Affairs on 16 April 2018 in Stuttgart

A small stretch of land between the Californian cities of San Francisco and San Jose has been setting the pace for digital transformation around the globe. Often referred to as Silicon Valley, this small area is home to the headquarters of the world's leading tech firms and start-ups and around a quarter of all venture capital worldwide. The question is, what can Germany learn from the example of Silicon Valley and how can we use this knowledge and the resources we already possess to avoid falling (further) behind in this technological race to the top?

Finding new strategies and digital solutions for German businesses was the focus of an event organised jointly by ZEW and the Baden-Württemberg Ministry for Economic Affairs, Labour and Housing held at the Baden-Württembergische (BW) Bank in Stuttgart.

In his presentation on “The Digital Market Economy – Challenges and Prospects”, ZEW President **Professor Achim Wambach** explained how digitalisation is leading to structural changes whereby existing markets are being shaken up by the entry of new, innovative competitors. “The dynamics of this development have been rapid,” said Wambach. In order to close the gap with international leaders on the digital market, it is essential that Germany as a whole and the state of Baden-Württemberg focus on three key missions: broadband expansion, e-government (i.e. digitalisation of public services) and investment in digital business models.

As **Andreas von Bechtolsheim**, founder of Sun Microsystems and one of the first to invest in Google, pointed out in his lecture from the US via live feed, though the funds for investment in digitalisation are there, Germany still has relatively few success stories comparable to the internet giants of Silicon Valley, such as Google or Facebook, to boast of. Von Bechtolsheim emphasised that it is generally easier for US firms to grow comparatively quickly due to the US market being much bigger and more homogeneous than in Europe. However, he also reminded the audience



Dr. Nicole Hoffmeister-Kraut,
Minister for Economic Affairs, Labour and Housing
of the State of Baden-Württemberg



Baden-Württemberg



that we are in a global competition. The focus, therefore, is on using new, innovative business models to expand globally.

Dr. Nicole Hoffmeister-Kraut, Baden-Württemberg Minister for Economic Affairs, Labour and Housing, pointed out that for her the issue of digitalisation has top priority. The state government plans to invest roughly a billion euros in digitalisation over the coming legislative period. According to Hoffmeister-Kraut, Baden-Württemberg currently finds itself in the middle of the industrialisation of the internet, a process that will prove decisive for the future of the region. While catching up with the US in terms of the commercial sector may no longer be an option, in the industrial sector this may still be a possibility. “We need to find and take our own path,” said the minister. This is where ZEW can act as a reliable cooperation partner for both local governments and businesses.

The evening’s panel debate provided some additional perspectives to those presented in the lectures. Though Nicole Hoffmeister-Kraut conceded that Andreas von Bechtolsheim’s experiences in Silicon Valley were somewhat sobering, she believed that Germany could still learn from the Californian tech hub, for example by supporting small and medium-sized enterprises through the ongoing structural changes.

Meanwhile, **Dr. Georg Müller**, CEO of the energy company MVV Energy, saw it as the duty of companies themselves to deal with digital transformation by making changes to their own internal structures. “It is the job of companies to foster a certain underlying sense of optimism among their own employees,” said Müller. According to Müller, businesses and governments are equally responsible for creating the conditions to keep Germany competitive on an international level. Government regulations are the right way to go as long as they are based on the right real-life examples.

As ZEW President Achim Wambach argued, regulators and competition authorities are already working intensively on this very issue. According to Wambach, abuse control is the best instrument to use. However, in such a highly dynamic market it is also necessary to create a certain amount of leeway. “We must allow a phase of experimentation,” said Wambach, describing Silicon Valley in this respect as “a kind of tractor”. However, we shouldn’t just be looking in one direction. Alongside the US, Israel is also cultivating a thriving start-up environment, while in China companies are already rolling out new technologies that we here in Germany haven’t even thought of yet.

The **Monitoring Report DIGITAL Economy Baden-Württemberg** published in 2018 provides an overview of how much progress has already been made and what is to be expected in the area of digitalisation in German companies. This provides a basis for determining economic and policy areas in need of action and identifying measures for actively shaping digital transformation.



DOWNLOAD

Monitoring Report DIGITAL Economy
Baden-Württemberg (in German only)

<https://zew.de/PU79857-1>

Blockchain Technology

Decentralising Coordination, Establishing Trust and Creating Transparency

Interview with Dr. Dominik Rehse, head of the Junior Research Group “Digital Market Design” in ZEW’s Research Department “Digital Economy”

The blockchain technology could be a building block for the next generation of digital platforms and change the design of markets. This presents both opportunities and risks.

What exactly is blockchain technology?

Blockchain technology can be used to run distributed computer systems and uses computer cryptography. In the case of Bitcoin, for example, this involves running a shared ledger in which anonymous users can use the specially created currency Bitcoin for wire transfers. Other blockchains can be used as the basis for running more complex programmes such as betting platforms. This could provide the technical basis for the digital platforms of the future.

How can blockchain-based digital platforms be used?

This technology can be sensibly applied in cases where the assumed functions are usually carried out by a trusted third party. In the case of Bitcoin, blockchain assumes the function of financial intermediaries in payment transactions. This occurs in a decentralised manner. In this case, it is the technology and not a central bank or another supervisory authority that creates trust and transparency. Pilot projects involving blockchain are, among other things, attempting to make food delivery chains more transparent, to establish confidence when it comes to defining rules for accessing health data and to further decentralise the energy market. These possibilities for creating transparency, establishing trust and decentralising coordination could significantly change the design of existing markets or even create entirely new markets.

Which markets have already been changed by this technology?

The way in which payments are processed outside of the existing financial system has changed significantly. Transactions that used to be made with cash now take place with cryptocurrencies in a relatively cost-effective way and without personal contact. This is probably what has made possible the success of online markets for illegal goods in the dark web. The pros and cons of the blockchain technology are therefore closely intertwined.



// Dr. Dominik Rehse

is head of the Junior Research Group “Digital Market Design” in ZEW’s Research Department “Digital Economy”. His current research primarily focuses on how digital platforms change the design of markets and institutions, or create new ones, and how they make use of algorithmic decision-making for this purpose.

Digital Tax for Europe

An Unnecessary Additional Burden That Is Not in the Interest of Germany

*Comment by ZEW Research Associate
Professor Christoph Spengel*

In 2018, the finance ministers of the European Union seemed to have agreed on the introduction of a so-called digital tax for Europe at the beginning of 2019. But nothing came of it. A corresponding legislative proposal at European level was ultimately unenforceable, and since unanimity is still required for tax issues in Europe, the proposal fell by the wayside. Is this a gift for globally active digital companies or a development that could well be in the interest of Germany? Against the background of the discussion on the digital tax, Professor Christoph Spengel, long-standing Research Associate at ZEW, called the purpose of the tax into question and shed light on his point of view.

“The idea behind implementing a digital tax at the European level is based on the assumption that digital companies pay less tax than traditional businesses. This is, however, simply not true. There are a number of reasons why a special tax is not appropriate here. The basis for taxation is and has always been company profit, regardless of whether the company in question is a digital enterprise or not. Moreover, it is downright impossible to make a clear-cut distinction between digital and traditional, or non-digital companies. In fact, in the future a number of sectors such as the automotive industry – if you think of self-driving cars for instance – as well as the pharmaceutical and chemical industries are set to become increasingly digitalised, which will make separating the digital from the non-digital even more difficult and lead to massive distortion effects.

Finally, a tax on revenue in the form of a digital tax will lead to severe cases of double taxation, since profits will still be subject to full taxation. All things considered, a digital tax would be an unnecessary additional burden on firms. Placing an additional burden on future technologies, which are associated with the creation of highly qualified jobs, cannot be in the interest of Europe and, even less so, of Germany.”



// Prof. Dr. Christoph Spengel

is a Research Associate at ZEW and holds the chair of Business Administration and Taxation II at the University of Mannheim.

Whoever Holds the Data Holds the Power

The Pros and Cons of the Data Economy

*Book release: “Digitaler Wohlstand für alle” (“Digital Prosperity for All”)
by Professor Achim Wambach and Hans Christian Müller*

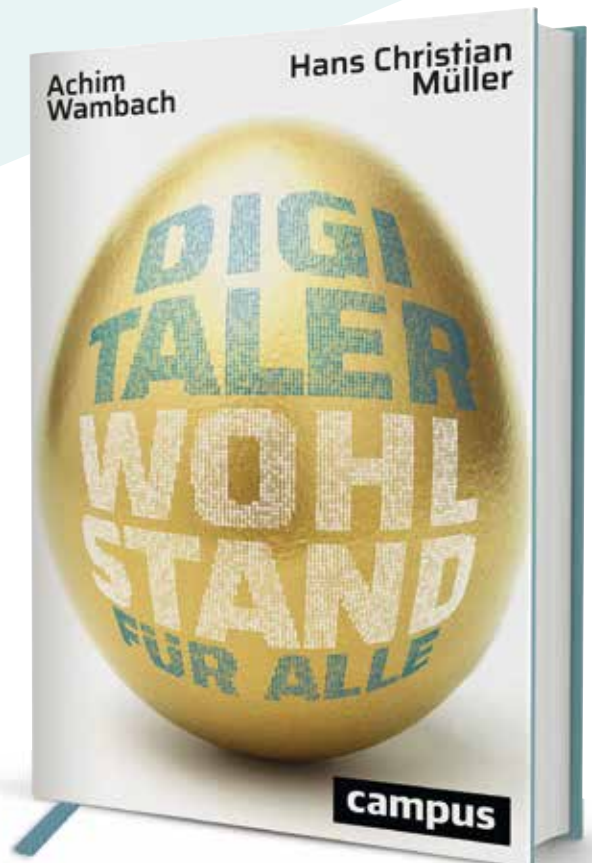
From searching for information on Google to connecting with friends on Facebook, consumers are able to access many services in the digital economy for free. The typical pricing mechanism that plays such a central role in the social market economy is no longer relevant in this new branch of the economy. However, while at first glance all these services might seem free, the internet has its own currency: our personal data. In exchange for online services, users provide companies with information that is of interest to them – particularly for the purposes of advertising.



In many sectors of the digital economy, data has become a crucial means of production, helping to advance humankind, for example, in the field of medicine. However, there are many potential dangers in terms of both data protection and the functioning of the markets. A large pool of data gives companies a competitive advantage and, in many cases, a means to keep their competitors from growing. This can lead to markets being monopolised, with negative effects for the economy as a whole.

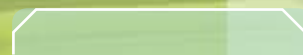
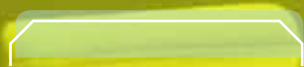
In their book, Professor Achim Wambach, President of ZEW and chair of the German Monopolies Commission, and Hans Christian Müller, editor at Handelsblatt, detail both the great promise the rise of the data economy brings and the problems it is likely to cause. They explain how data has come to be such a crucial form of payment in the digital economy, why not all markets function better when there is more data available and how data can encourage the development of monopolies. They also explain the role of trust in data protection for the success of digital transformation and address the core question of how to differentiate between “good” and “bad” data and how to deal with both.

The authors are confident that many of the things that have only recently been made possible thanks to data analytics have already helped to create prosperity, even though they initially started without any plan or system in place. According to the authors, it is therefore absolutely essential that future efforts focus on bringing order to the data economy to ensure that these prosperity-enhancing effects continue to develop in the desired way. With this purpose in mind, companies, competition regulators and policymakers need to develop new and transparent rules suitable for this new digital age. This is the only way to create trust in the data economy and in technological progress.



WEBSITE OF THE PUBLISHER

<https://bit.ly/2WxlnLG>



RESEARCH
SCIENCE

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ABOUT US

ZEW at a Glance

- 0034 → ZEW in Brief
- 0036 → ZEW in the World
- 0038 → Research
- 0040 → Policy Advising
- 0042 → Personnel and Finances
- 0044 → Focus on “Europe”** 

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ZEW conducts evidence-based economic policy research on a range of high-visibility topics, including the **digital transformation, demographic change, European integration**, and the **energy transition**. As an independent research institute that is home to a broad spectrum of expertise, ZEW advises key political decision-makers while actively contributing to important public debates.



MISSION

The two main pillars of ZEW's work are:

- economic policy research
- evidence-based policy advising

ZEW IN BRIEF

The Mannheim-based ZEW – Leibniz Centre for European Economic Research is a leading German economic policy institute and a member of the Leibniz Association. Its applied research aims to study and help design well-performing markets and institutions in Europe. In particular, it seeks to understand how to create a market framework that will enable the sustainable and efficient development of European economies.

ZEW also offers evidence-based policy advising. The size of ZEW and the broad spectrum of topics studied by our research units enable us to take on major commissioned projects in economic policy.

Under the leadership of Professor Achim Wambach, the president of the institute, and Thomas Kohl, the institute's director, ZEW currently employs some 180 people spread out across eight research units, three junior research groups, and four service departments.

ZEW IN THE WORLD

ZEW employs outstanding researchers, recruits economists in Germany and abroad, and promotes young researchers from around the world. These activities increase the visibility of ZEW's research and policy advising outside Germany, boosting its international reputation.

ZEW maintains a dense and growing network of partners from Germany and abroad. In 2018, the institute worked together with more than 340 partners on a host of projects and publications. In the immediate region, ZEW cooperates closely with the universities of Mannheim and Heidelberg in numerous areas, from joint faculty appointments to joint seminars and various forms of resource sharing. At the same time, ZEW has forged important partnerships with institutions in Europe, North America, and Asia. These include work with the Fudan University in Shanghai on the China Economic Panel (CEP) and the co-founding of EconPol Europe together with organisations from 12 countries. ZEW also cooperates with some 100 Research Associates who contribute to the work of ZEW's research units. The Visiting Researchers Programme promotes scientific exchange and attracts international researchers to the institute.

Many of ZEW's researchers have secured professorships at major universities, which is a testament to the quality of its staff. In 2018, ZEW researchers accepted appointments at universities in Mannheim, Heidelberg, and Kassel as well as at Ghent University, the Hamburg University of Applied Sciences, and FH Aachen.

RESEARCH VISITS
AT ZEW

59

COOPERATION
PARTNERS

344

RESEARCH STAYS BY
ZEW RESEARCHERS

32

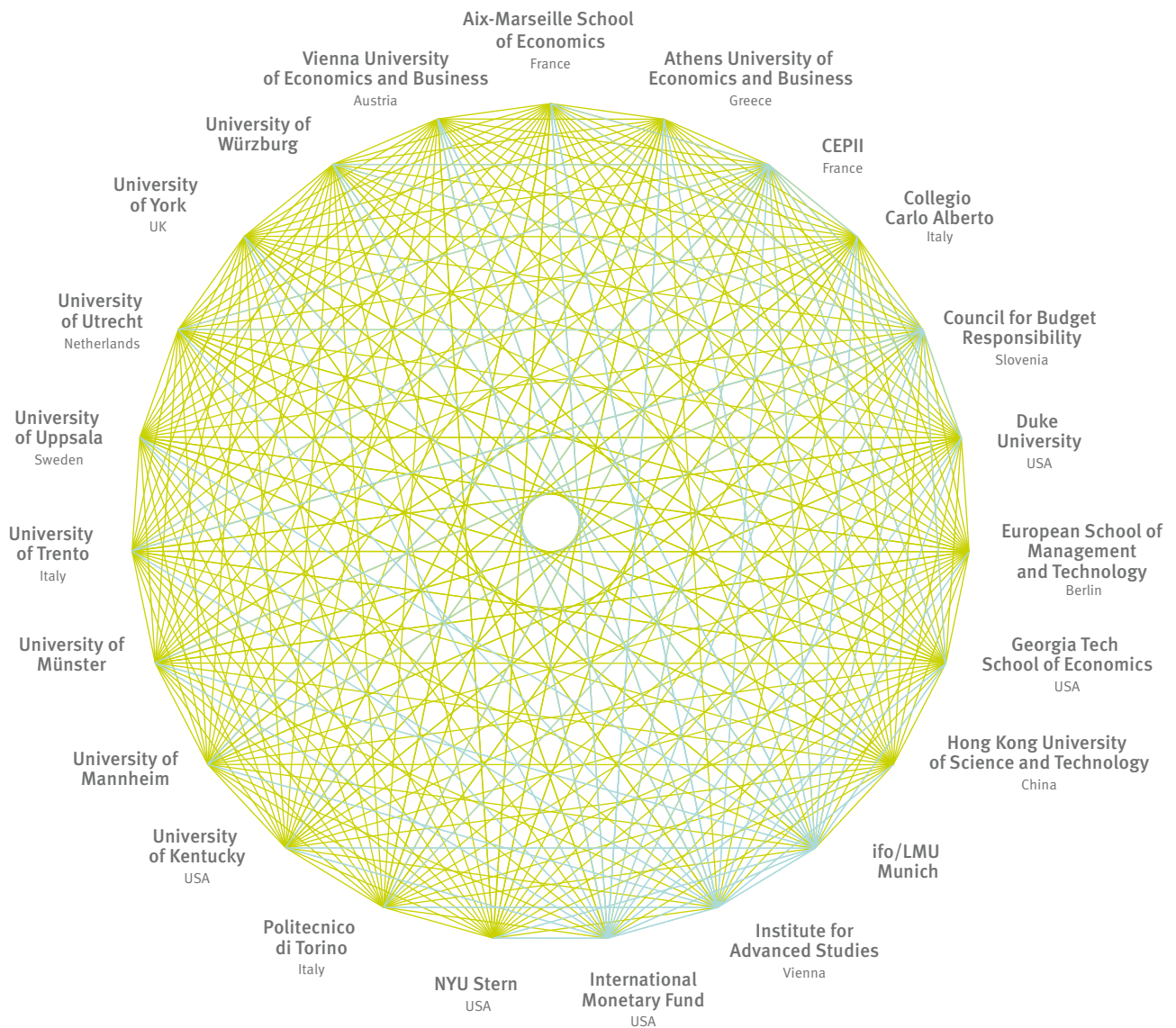


The “Strengthening Efficiency and Competitiveness in the European Knowledge Economies” (SEEK) research programme is enabling ZEW to further establish its position in the international research landscape. Financed by the State of Baden-Württemberg since 2010, the programme contributes to a better understanding of the economic challenges facing the European Union and its Member States.

1 /

COOPERATION PARTNERS OF ZEW IN THE SEEK PROGRAMME

SEEK partner institutions 2016 – 2018



RESEARCH

Research excellence at ZEW has various dimensions: publications in scientific journals, the exchange of knowledge at conferences, the hosting of visiting researchers and workshops, and the development of unique databases.

Publications in top journals

In 2018, ZEW researchers continued their outstanding publication record, with numerous articles accepted to prominent peer-reviewed journals, including The Journal of Financial Economics, the Journal of Public Economics, and Management Science.

Rewarding exchange

In order to ensure that the institute's research is communicated effectively to target audiences, ZEW organises numerous conferences on a variety of topics. In 2018, ZEW organised over 40 conferences and workshops. The highlight was the fifth annual MaTax conference, in which experts spoke before an international audience on tax avoidance, inequality, and other areas of taxation research.

Prizes and awards

As in previous years, ZEW researchers received prizes and awards for their work in 2018. For instance, Sebastian Blesse, from the Research Department "Corporate Taxation and Public Finance", received the Federalism and Regional Research prize from the Institute for Federalism in Innsbruck for his co-authored article "Was bringen kommunale Gebietsreformen?" ("What Are the Benefits of Municipal Territorial Reforms?").

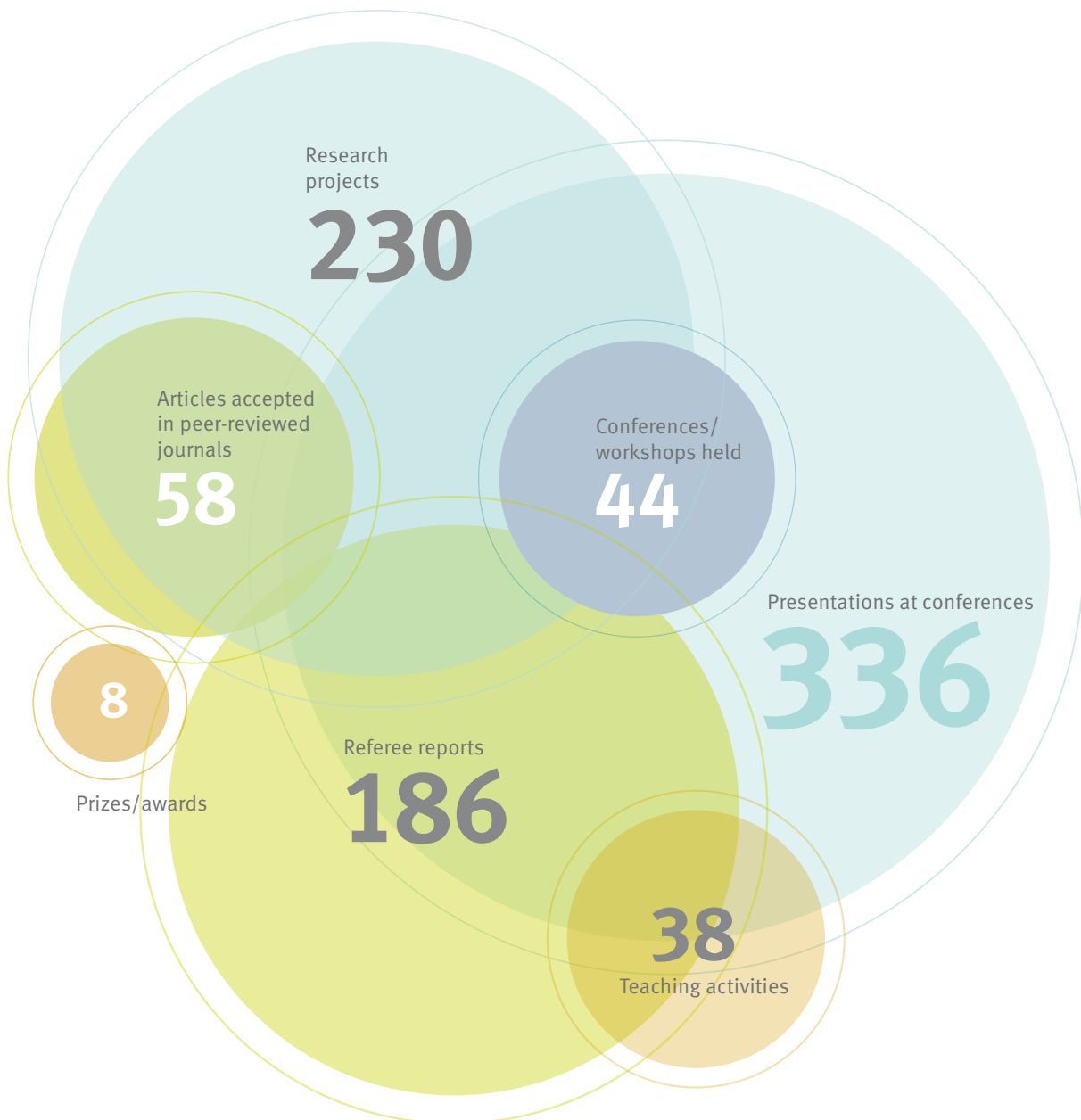
// ZEW Research Data Centre

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

ZEW | **FDZ**
ResearchDataCentre

2 /

ZEW SCIENTIFIC OUTPUT 2018 IN NUMBERS



POLICY ADVISING

One of ZEW's key objectives is to provide insightful policy advising based on good research and data. Our clients include policymakers and public authorities at the regional, national, and European levels, as well as associations and international organisations.



Economic policy advising from ZEW takes a number of forms:

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

To perform economic research that has a political impact – this is the goal pursued by ZEW researchers on a daily basis. In 2018, ZEW further augmented its strong reputation as an actor in the area of policy advising.

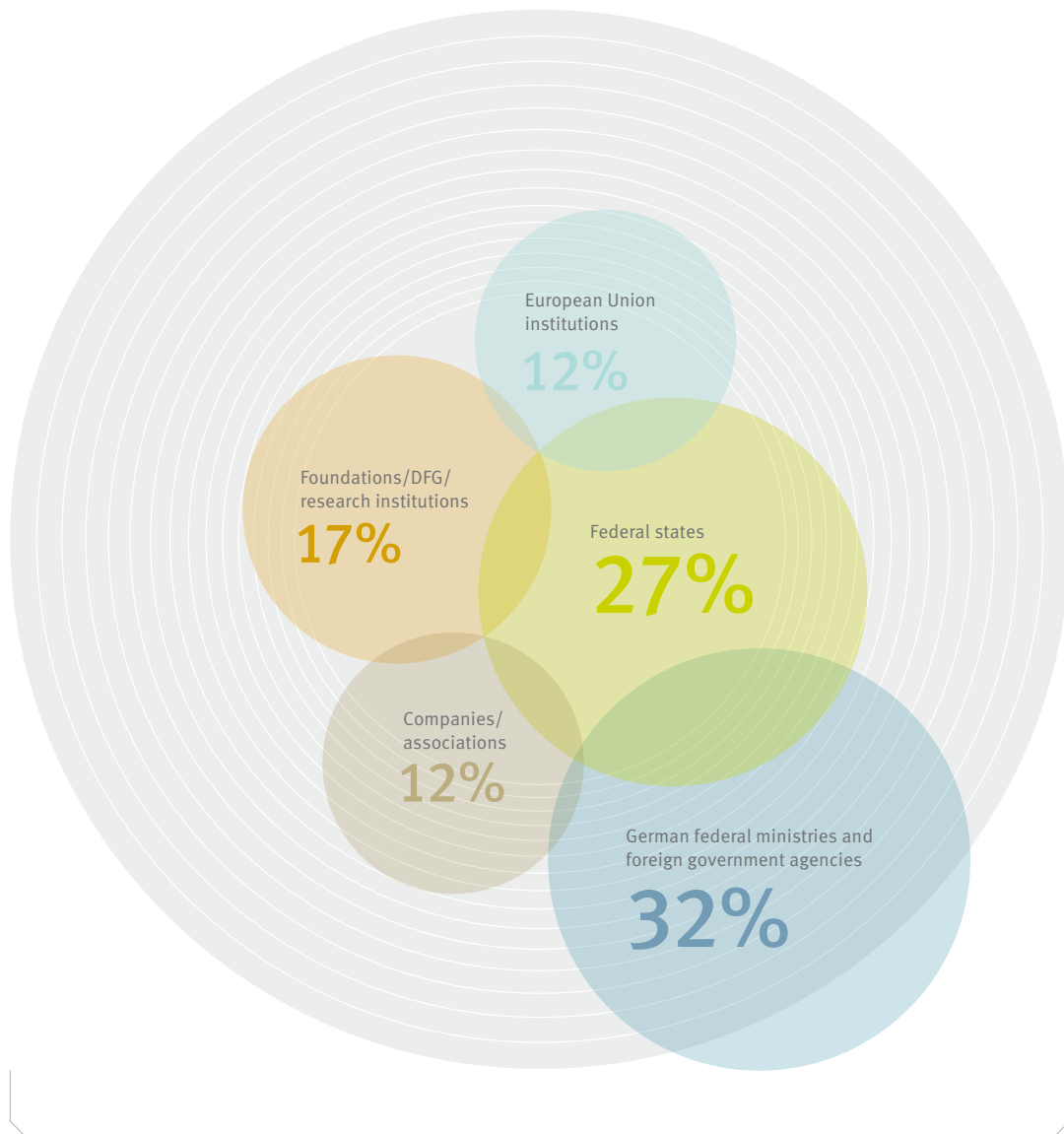
For example, ZEW's Achim Wambach, the chair of Germany's Monopolies Commission since 2016, advised the federal government on competition policy, competition law, and regulation.

In addition, the Federal Ministry of Economic Affairs and Energy once again commissioned ZEW's "Digital Economy" Research Department to investigate the level of digitalisation in the German economy and to measure business attitudes towards AI. Professor Friedrich Heinemann advised the EU Commission on the EU's next financial framework, identifying the areas in which collective European action delivers added value, and where it does not.

At the UN climate conference in Katowice, the Research Department of "Environmental and Resource Economics, Environmental Management" created a discussion platform and provided recommendations for implementing the Paris climate agreement.

3 /

SOURCES OF THIRD-PARTY FUNDING IN 2018



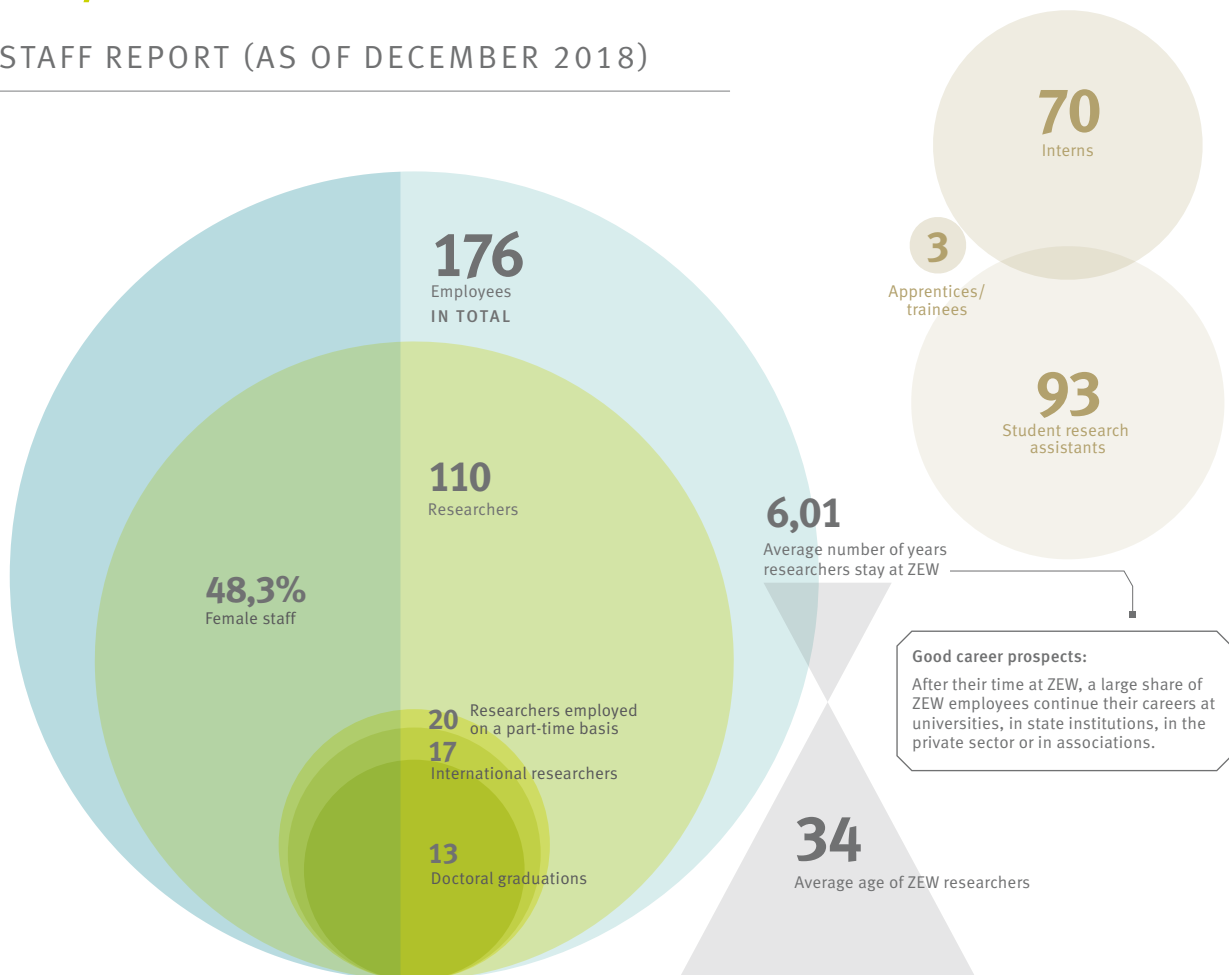
THIRD-PARTY FUNDS

PERSONNEL AND FINANCES

The stats don't lie: our staff is young, international, and ambitious. Here are the important figures from 2018, from personnel to finances.

4 /

STAFF REPORT (AS OF DECEMBER 2018)



5 /

FINANCIAL REPORT (AS OF DECEMBER 2018)

ZEW PROFIT AND LOSS STATEMENT

	2017	2018*
Institutional funds	9,292	9,475
Joint Initiative for Research and Innovation Funding	332	287
Third-party funds (turnover, inventory changes, subsidies)	8,655	7,945
Other business revenues	344	394
Income from the reversal of the special item for contributions to fixed assets	611	550
Total revenues	19,234	18,651
Staff expenditures	12,020	11,876
Third-party services	1,218	1,019
Other operating expenditures	4,585	4,246
Asset write-offs	585	527
Allocation to special items for contributions to fixed assets	314	388
Other taxes	33	-27
Total expenses	18,755	18,029
Financial result	-38	-38
Profit/loss for the financial year	441	584
Withdrawals from appropriated reserves	358	542
Net income	799	1,126

ZEW BALANCE SHEET AS OF 31 DECEMBER 2018*

	2017	2018		2017	2018
ASSETS			LIABILITIES AND EQUITY		
Intangible assets	120	55	Share capital	26	26
Downpayments made	-	18	Appropriated reserves	3,656	3,913
Real estate and construction in process	8,601	8,379	Other reserves	2,170	2,169
Equipment	562	691	Net income	799	1,126
Fixed assets	9,283	9,143	Shareholder's equity	6,651	7,234
Stocks	2,161	2,453	Untaxed reserves	1,827	2,317
Receivables/ other assets	904	700	Reserves	2,267	2,334
Cash at banks	8,122	8,686	Advances received	1,855	2,137
Current assets	11,187	11,839	Liabilities to banks	5,290	4,660
Prepaid expenses	250	275	Other liabilities	2,830	2,575
Total	20,720	21,257	Outside capital	12,242	11,706
			Total	20,720	21,257

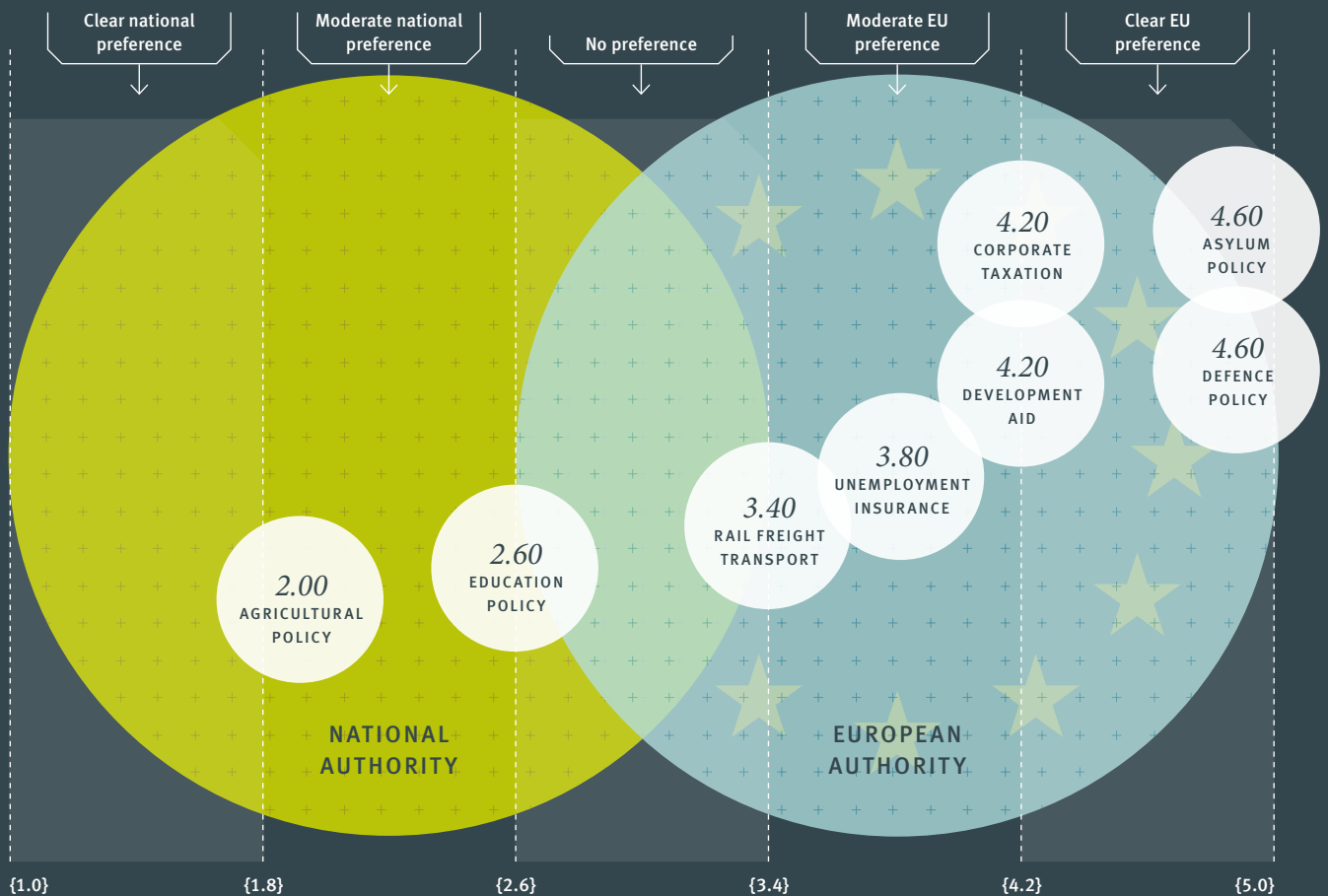
* preliminary figures in K euros

EUROPE

EUROPEAN INTEGRATION: HOW MUCH EU DO WE NEED?

HOW EUROPE CAN DELIVER ¹

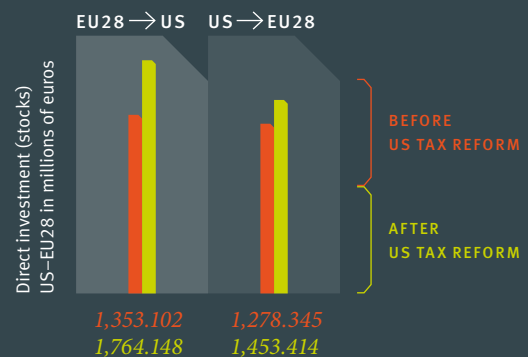
The ZEW/Bertelsmann study assessed eight policy areas and then for each one recommended whether it should fall under the authority of the EU or the Member States. For five of the areas, the study finds that a shift from the national to the European level would be advantageous.



A ranking system was used to assess the policy areas: a score of 1.0 to 1.8 indicates a clear preference for national authority; a score of 1.8 to 2.6 indicates a moderate preference for national authority; a score of 2.6 to 3.4 indicates no preference; a score of 3.4 to 4.2 indicates a moderate preference for European authority; and a score of 4.2 to 5.0 indicates a clear preference for European authority.

DIRECT INVESTMENTS BEFORE AND AFTER US TAX REFORM ²

The figure shows the simulated effects of US tax reform on direct investments between the US and the Member States of the EU-28.



Sources:

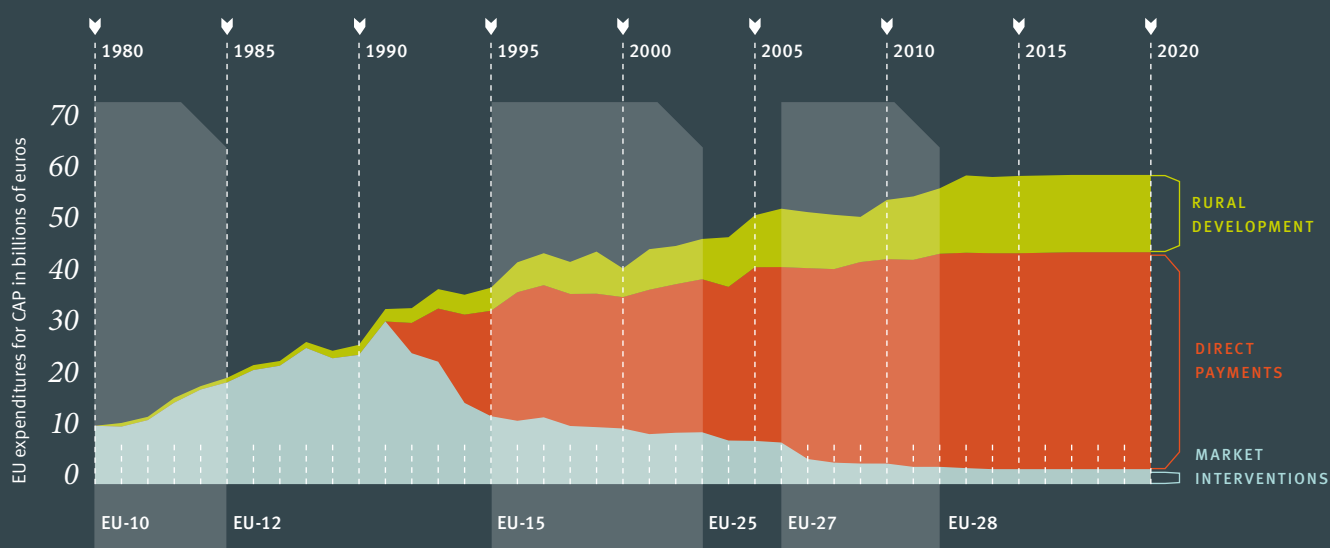
1 | Bertelsmann and ZEW (2017):

"How Europe Can Deliver" (https://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/EZ_Kompetenzstudie_2017_ENG.pdf)

2 | ZEW (2018): "Implications of the US Tax Reform for Transatlantic FDI" (<https://www.zew.de/PU79904>)



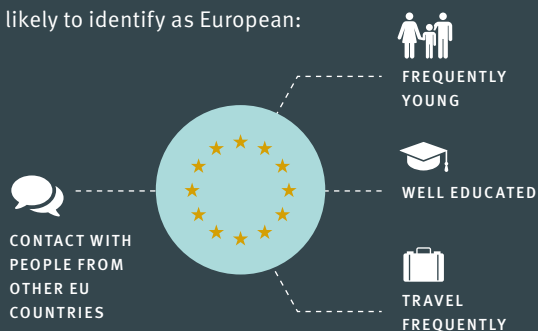
EXPENDITURES IN COMMON AGRICULTURAL POLICY (CAP), 1980–2020 ³



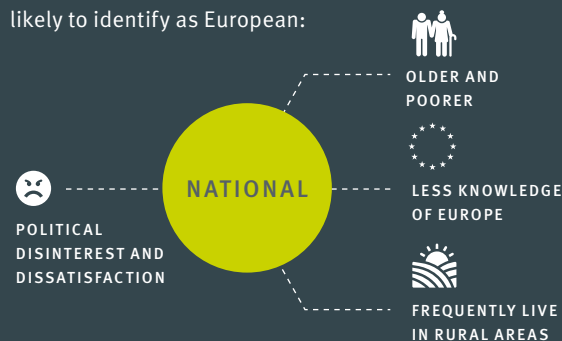
2021–2027 **265** BILLION EUROS AS DIRECT PAYMENTS TO FARMERS ACCORDING TO CURRENT PROPOSAL →  **1/5** OF TOTAL BUDGET EARMARKED FOR DIRECT PAYMENTS TO FARMERS

EUROPEAN IDENTITY ⁴

People who are much more likely to identify as European:



People who are much less likely to identify as European:



Create European encounters:



³ | Bertelsmann and ZEW (2018): "The EU Budget and Common Agricultural Policy Beyond 2020: Seven More Years of Money for Nothing?" Bertelsmann Stiftung, Reflection Paper No. 3: Preparing for the Multiannual Financial Framework after 2020 (https://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/EZ_Reflection_Paper_3.pdf)

⁴ | EconPol Policy Report (2018): "What a Feeling?! How to Promote 'European Identity'"; (<https://www.zew.de/PU80436>)

ZEW research liaison: Prof. Dr. Friedrich Heinemann.



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RESEARCH UNITS

Highlights of 2018

- 0048 → Labour Markets and Human Resources
- 0054 → Digital Economy
- 0060 → Economics of Innovation and Industrial Dynamics
- 0066 → International Finance and Financial Management
- 0072 → Social Policy and Redistribution
- 0078 → Environmental and Resource Economics, Environmental Management
- 0084 → Corporate Taxation and Public Finance
- 0090 → Market Design
- 0096 → Focus on “Demographic Change” 





“Digitalisation makes working conditions more flexible, but it also requires workers to take on more individual responsibility.”

// PD Dr. Friedhelm Pfeiffer, acting head of the Research Department
“Labour Markets and Human Resources”



RESEARCH DEPARTMENT

LABOUR MARKETS AND HUMAN RESOURCES



RESEARCH AREAS

- **Employment Dynamics in Organisations**
Jun.-Prof. Dr. Susanne Steffes
- **Education and Labour Market Outcomes**
PD Dr. Friedhelm Pfeiffer
- **Digitalisation and International Labour Division**
Prof. Dr. Melanie Arntz
(Leibniz Programme for Female Professors)
- **Integration into Labour Markets**
Dr. Laura Pohlan

HEAD

Acting head

PD Dr. Friedhelm Pfeiffer

Deputy head

Prof. Dr. Melanie Arntz

MISSION STATEMENT

The Research Department “Labour Markets and Human Resources” investigates determinants of individual and economy-wide labour market outcomes in knowledge-based economies. Research activities focus on the role of ongoing education, digitalisation, the international division of labour and immigration for employment, wages and social inclusion. In addition, the department examines the effects of labour market policies. Theory-based microeconomic methods are utilised to analyse cause-and-effect relationships. Datasets used include administrative and publicly accessible data, as well as survey data collected by ZEW. The Research Department intends to elaborate evidence-based recommendations for the design of labour market, education and human resource policies.

1

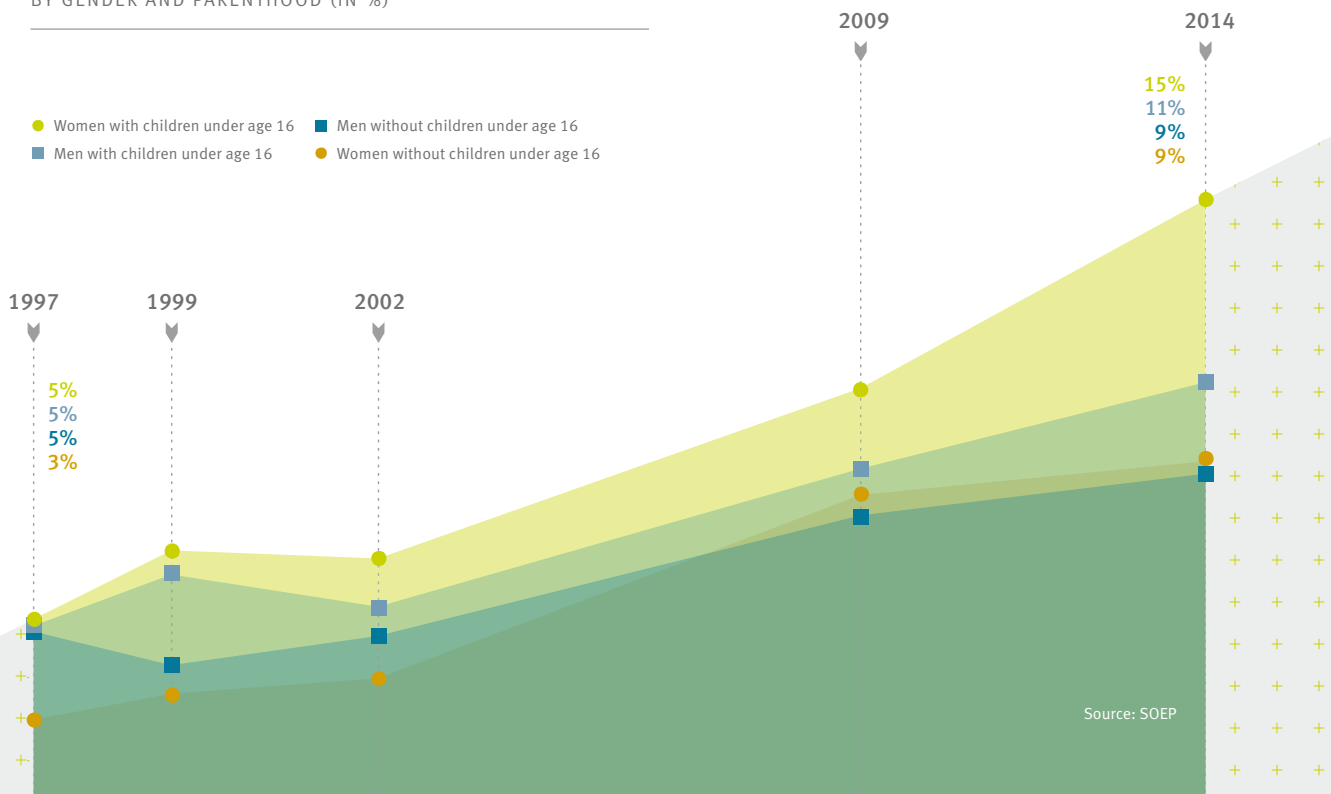
WORKING FROM HOME BENEFITS THE CAREERS OF WORKING MOTHERS

- Working from home increases the working hours and wages of working mothers
- There is no change in parents' work-life balance

Advances in digital technology have made it increasingly easy to get work done outside of the office. The result is more flexible working hours. A study conducted by this research department demonstrated that working from home has very different effects for workers without children and for parents. Those without children who work from home work, on average, one additional hour of overtime per week without receiving pay for the extra working hours. Parents who work from home work less overtime hours but more regular hours. The increase in working hours is accompanied by a 16 per cent increase in wages for working mothers. The wages of fathers increase by around two per cent. In addition, wages for working mothers who change jobs and work from home increase more than wages for fathers. Despite these improvements, it appears that parents' work-life balance has not changed.

1 /

SHARE OF INDIVIDUALS WORKING FROM HOME OVER TIME, BY GENDER AND PARENTHOOD (IN %)



2

DIGITALISATION AND THE LABOUR MARKET 

- Digitalisation creates more jobs than it eliminates
- Job requirements are changing

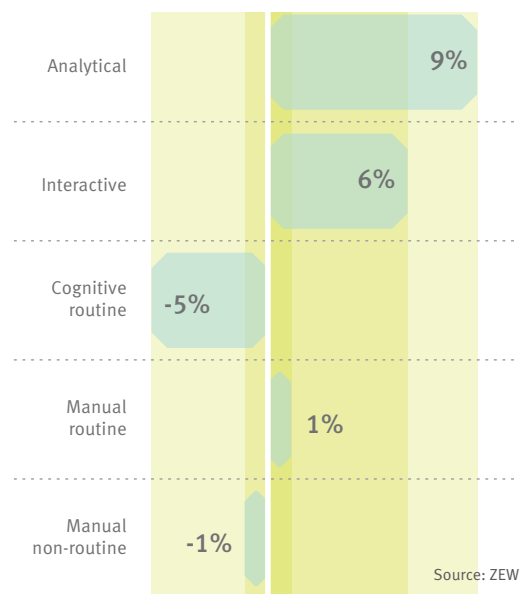
Corporate investment in new technologies has increased the number of jobs in Germany overall. Between 2011 and 2016, the number of jobs rose by one per cent as a result of these investments. Despite the fears often expressed in public debate, digital transformation is currently creating more jobs than it eliminates. These are the conclusions of a recent study that built an estimated structural model of the national economy partly based on a survey of corporate technology use in Germany. While taking into account reactions in labour supply and demand, the model also made it possible to classify the recent effects of technological change on jobs, wages, and unemployment into several distinct categories. It showed that slight increases in employment are accompanied by large structural effects. Current technology investment is eliminating manual and cognitive routine-task based jobs in particular, as well as non-routine manual jobs, while it is also increasing the number of analytic and interactive jobs. At the same time, there are positive product demand effects due to the improved competitiveness of the companies.

As a result, technological change significantly changes job requirements but also increases employment and wage inequalities. Jobs and wages grow faster in highly paid careers or sectors than in medium or low-paid careers or sectors. But the easier it is for workers to move from declining segments into growing segments of the labour market, the greater they profit from increased wages in the growing sectors and career opportunities. So policies aimed at increasing career mobility could help more workers participate in the benefits of digitalisation.

2 /

CHANGE IN EMPLOYMENT AS A RESULT OF INVESTMENTS IN NEW TECHNOLOGIES, BY PROFESSIONS

(Employment effect 2011 – 2016)



3

ATTACKS ON ASYLUM SEEKERS DEPEND ON PREVIOUS IMMIGRATION

- Crimes against asylum seekers have risen dramatically
- The lower the number of immigrants in a region, the more crimes are committed

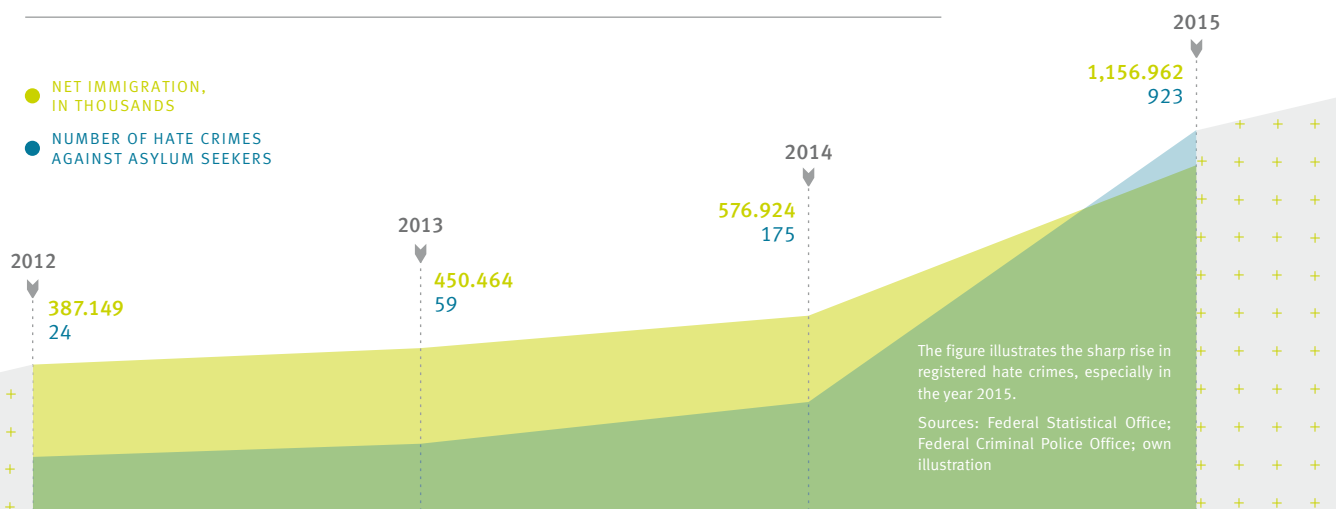
Hate crimes are politically motivated crimes committed against certain social groups who are victims of prejudice or discrimination. Together with the Goethe University in Frankfurt, ZEW researchers studied regional factors determining the rate of hate crimes against centres for asylum seekers and their residents.

The study showed that there is no direct correlation between the absolute numbers of asylum seekers brought to a region and the number of hate crimes in the region. Districts and towns with a high influx of refugees did not have a greater per capita rate of attacks against asylum seekers than areas with lower numbers of asylum seekers. Instead, the researchers found that the rate of attacks depends on the number of immigrants in the region before the refugees arrived. The rate of hate crimes increased most in regions that previously had a low percentage of foreign residents.

The study also showed that a region's economic strength was not a statistically significant factor for the rate of hate crimes. In fact, regions that experienced more attacks on immigrants 25 years ago still had higher rates of hate crimes. Between 2013 and 2015, the chances an asylum seeker would be the victim of a hate crime was ten times higher in East Germany than in West Germany. So there is no evidence that strengthening the regional economy can by itself reduce the number of hate crimes. Over the long term, increasing tolerance for asylum seekers requires broadening the general population's experience with immigrants.

3 /

NET IMMIGRATION AND HATE CRIMES AGAINST ASYLUM SEEKERS





“Artificial intelligence
can boost productivity and
growth. Companies can’t
put off making it a **priority.**”

// Prof. Dr. Irene Bertschek, head of the Research Department “Digital Economy”

RESEARCH DEPARTMENT

DIGITAL ECONOMY



RESEARCH AREAS

- **Diffusion of Digital Technologies**
Dr. Jörg Ohnemus
- **Digitalisation and Corporate Strategies**
Prof. Dr. Irene Bertschek
- **Digital Platforms**
Olga Slivkó, PhD
- **Junior Research Group**
Digital Market Design
Dr. Dominik Rehse

HEAD

Head

Prof. Dr. Irene Bertschek

Deputy head

Dr. Jörg Ohnemus

Head of Junior Research Group

Dr. Dominik Rehse

MISSION STATEMENT

The “Digital Economy” Research Department studies the impact of digitalisation on economic processes. It investigates changes in production, innovation, and the working world brought about by digitalisation, as well as digital markets and platforms. The Research Department’s work provides a foundation for evidence-based policy decisions in order to allow the benefits of ICT for smart value-added production, sustainable usage of natural and immaterial resources, and inclusion of people in the generation of knowledge and wealth to be leveraged at the national and European levels. The researchers in the Department conduct empirical research, using econometric methods to analyse data gathered from in-house company surveys, Internet platforms, and macroeconomic databases. This makes the Research Department an important centre in Germany for the economic analysis of digitalisation.

1

SEARCH RESULTS AT HOTEL BOOKING WEBSITES

- Rankings depend on prices on competing sales channels
- Ranking position does not necessarily serve consumer interest

How do changes in hotel prices at competing sales channels affect the hotel's position in a booking website's recommended search results? To answer this question, the research department analysed search results on the two biggest hotel booking sites, Booking.com and Expedia, as well as on the metasearch engine Kayak for 250 cities in various countries from July 2016 to January 2017.

This analysis showed that prices for at least some of the hotels varied between different sales channels. One out of four hotels could be booked for a lower price on the hotel's own website than on a particular hotel booking website. The data also showed that when a lower price was offered at a competing booking website or at the hotel's own website, this resulted in a lower ranking for the hotel in the search results. The results were the same in countries with or without price parity clauses. The greater the price difference between the hotel booking websites, the worse the hotel ranked in the search results. That means that hotels available at lower prices on competing channels are less visible even though their prices have not been undercut. This in turn influences how hotels set their prices, possibly reducing price differences between sales channels.

Taking these price differences into account means a hotel's ranking in a booking website's recommended search results depends on factors relevant for maximising the website's profits instead of serving consumer interest. In addition, by optimising their search results in this way, hotel booking websites can affect hotel prices across all sales channels. The result is basically the same as implementing price parity clauses, which in many European countries have been banned by lawmakers or antitrust authorities. At the same time, the quality of search rankings may be compromised, serving consumer interest to a lesser degree.

25 %

OF OFFERS ON HOTEL WEBSITES ARE CHEAPER THAN ON BOOKING SITES



STUDY

"Hotel Rankings of Online Travel Agents, Channel Pricing, and Consumer Protection"

www.zew.de/PU80641-1

2

ARTIFICIAL INTELLIGENCE: GOOD LONG-TERM PROSPECTS FOR GROWTH

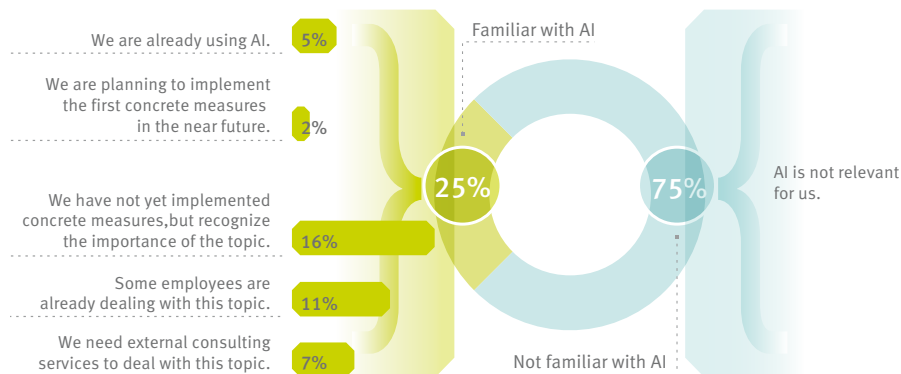
- 16 per cent of companies have recognised the importance of AI
- Obstacles: data protection and limited appreciation of results

The DIGITAL Economy Monitoring Report 2018 commissioned by the German Federal Ministry of Economic Affairs and Energy was devoted to the cutting-edge topic of artificial intelligence (AI). In 2018, nearly five per cent of companies in the commercial sector in Germany used AI technologies. That was double the number of companies using them in the previous year. An additional two per cent of companies plan to implement these technologies in the future. Although these levels are still low, the popularity of AI applications could increase rapidly in the future. Sixteen per cent of companies report that they have identified AI as an important issue, and 31 per cent expect their companies to rely on AI solutions in ten years. That means that AI will remain a key focus for digitalisation going forward.

The authors of the study were the first winners of the research award for best economic and political advisory project funded by the ZEW Sponsors' Association for Science and Practice.

1 /

SHARE OF COMPANIES ALREADY DEALING WITH THE TOPIC OF AI



Multiple answers allowed (left side)



DOWNLOAD

DIGITAL Economy
Monitoring Report 2018

www.zew.de/PU80632-1

3

ZEW CONFERENCE “THE ECONOMICS OF ICT”

- Sixteenth edition of the conference
- Research results on big data and online platforms

In June 2018, the research department hosted the sixteenth edition of “The Economics of Information and Communication Technologies” conference. Over the years, the event has become one of the most important academic conferences concerning the digital economy. Around 75 participants from around the world came together at the event to discuss the latest academic research in this subject area.

Both keynote speeches focused on digital data and online platforms. In her keynote address, Professor Ginger Zhe Jin of the University of Maryland discussed the implications of big data for consumer protection and competition regulation policy. She showed that the use of digital data could exacerbate market imperfections. Data ownership can increase the market power of individual platforms and stimulate monopolistic tendencies. For consumers, a glut of data makes it more difficult to identify relevant information. In general, exploitation of data for economic purposes brings with it new consumer protection and competition regulation challenges in areas such as data property rights and their use. In the coming years, economists will be called on to help design regulatory solutions to tackle these challenges. In his keynote speech, Professor Feng Zhu of the Harvard Business School discussed the recent findings of his research on online platforms. He demonstrated the importance of network effects between the supply and demand sides. He also explained the strategic formation of local and global user clusters.

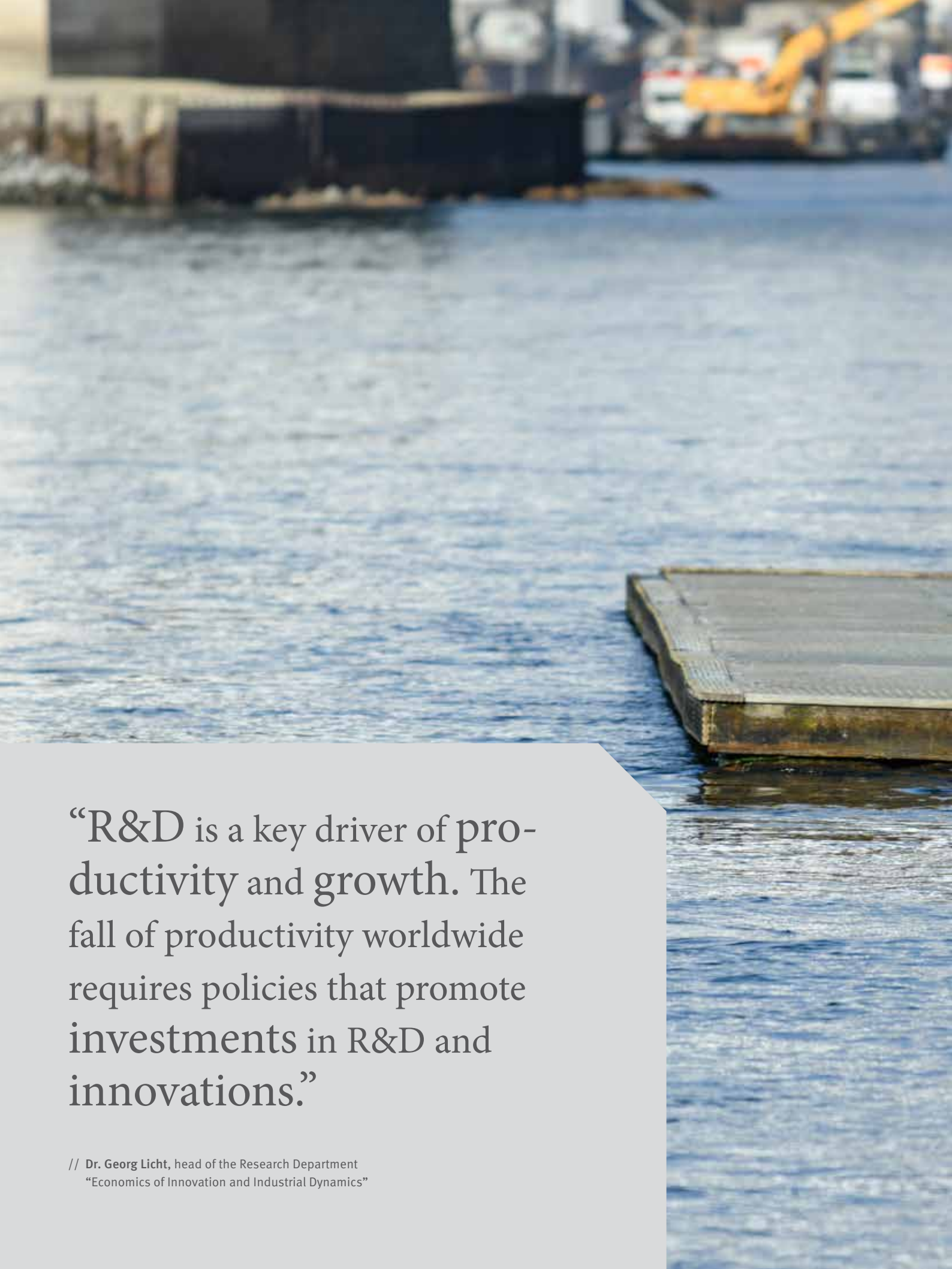
In the breakout sessions, topics included social media, the sharing economy, job acquisition via online portals, online advertising and the application of machine learning. The event also focused on online user behaviour, distortions in online product and service ratings, the impact of digitalisation on political mobilisation, and changes in workplace activities.

The conference included a total of 40 presentations and subsequent discussions, and received funding from the German Research Foundation (DFG).



WEBSITE

Further information:
www.zew.de/AM5969-1

A photograph of a body of water, likely a harbor or industrial site. In the foreground, a concrete pier or dock extends into the water. The water is blue with some ripples. In the background, there are industrial structures, including a large yellow crane or excavator. The overall scene is somewhat blurred, suggesting a focus on the text overlay.

“R&D is a key driver of productivity and growth. The fall of productivity worldwide requires policies that promote investments in R&D and innovations.”

// Dr. Georg Licht, head of the Research Department
“Economics of Innovation and Industrial Dynamics”



RESEARCH DEPARTMENT

ECONOMICS OF INNOVATION AND INDUSTRIAL DYNAMICS



RESEARCH AREAS

- **Innovation Processes in Firms**
Prof. Dr. Bettina Peters, Dr. Christian Rammer
- **Firm Foundations, Firm Closures
and the Growth of Start-ups**
Jürgen Egelin, Dr. Johannes Bersch
- **Industry-Science Linkages
and Technology Transfer**
Florence Blandinières, PhD,
Josefine Diekhof, PhD
- **ZEW Research Data Centre**
Dr. Sandra Gottschalk
- **Junior Research Group
Competition and Innovation**
Dr. Bernhard Ganglmair

HEAD

Head

Dr. Georg Licht

Deputy heads

Jürgen Egelin

Prof. Dr. Bettina Peters

Dr. Christian Rammer

Head of Junior Research Group

Dr. Bernhard Ganglmair

MISSION STATEMENT

The Research Department “Economics of Innovation and Industrial Dynamics” investigates the behaviour of firms under dynamic market conditions. The department focuses on empirical analyses of company innovation behaviour, the division of labour among innovation system actors, the circulation of research results between companies and researchers, market entries and exits, the development of companies, trends in product market competition and the associated incentives for innovation. Its research identifies the challenges faced by firms and economic policymakers. It also analyses and assesses government economic policy and business strategies, and proposes new courses of action. The economic and innovation policies analysed and assessed by the department frequently concern inadequately designed or insufficiently developed product and factor markets.

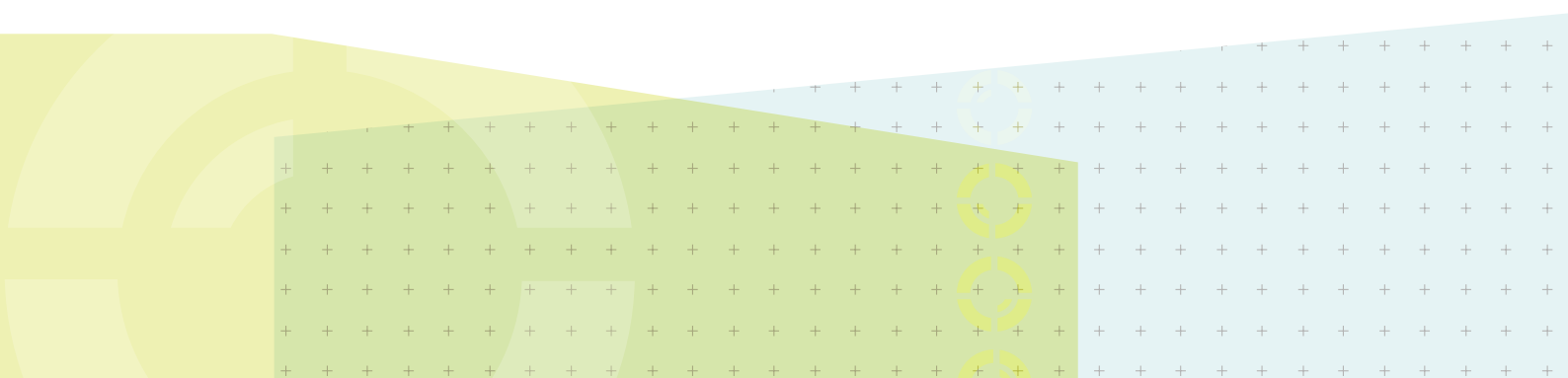
1

TRACKING INNOVATION 

- An analysis of company websites using AI resulted in an exhaustive, up-to-date snapshot of innovation in Germany

For the research project “Text Data Based Output Indicators as Base of a New Innovation Metric” (TOBI) the research department teamed up with the University of Giessen to develop new output indicators for innovation activity. The project used computational linguistic analysis and artificial intelligence to process large quantities of text data.

At the heart of the project was an analysis of company website texts. The project automated the websites of 1.15 million German companies. The sites were then compiled and assessed at regular intervals using a web scraper. For some of these companies production innovation information was already available from ZEW’s regular, representative innovation survey, the Mannheim Innovation Panel. This information was used to train a neural network that applied deep learning optimisation methods to analyse the web content of companies both with and without product innovations. The results of this learning process were then applied to all the company websites. The initial results of the research were extremely promising. The neural network could correctly classify 89 per cent of the companies. The identified sector and size differences among the companies with product innovations were highly plausible. The first empirical application of the approach resulted in a picture of product innovation in the German economy that was fully up-to-date and geographically highly precise.



2

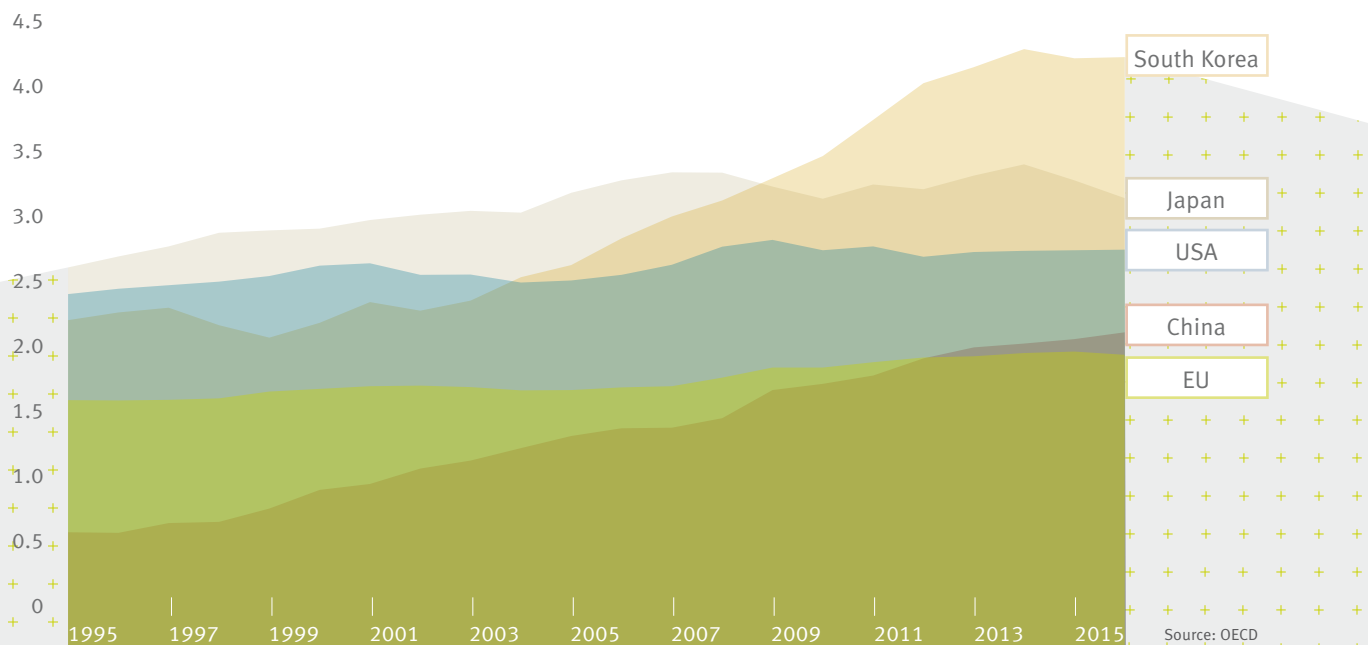
FRAME: A NEW APPROACH TO MACROECONOMIC R&D MODELLING

- A project of the EU's framework programme "Horizon 2020"
- A new tool for analysing innovation policy instruments

In an international comparison, the EU has fallen behind in terms of investment in research and development in recent years. (see illustration). The long-term repercussions of low investment in R&D on wealth creation, competitiveness, and the labour market are key concerns for economic policy. The EU project FRAME, which is coordinated by the research department, addressed these challenges by closely studying the dissemination of knowledge. As part of the EU's framework programme "Horizon 2020", the project's goal was to provide decision-makers with better solutions as well as develop new methods for integrating research, development, innovation, and diffusion into macroeconomic policy.

1 /

DEVELOPMENT OF THE RATIO OF R&D TO GROSS DOMESTIC PRODUCT
(IN PERCENT) IN INTERNATIONAL COMPARISON



3

COMPETITION AND INNOVATION

- New Junior Research Group “Competition and Innovation”
- Annual MaCCI conference featuring internationally recognised guests

Since the beginning of the year, members of the newly formed Junior Research Group “Competition and Innovation” have studied how competition rules can be optimally designed to improve the function of markets for goods and services on the one hand and for technology on the other. The research group analyses the incentive effects of law or law enforcement on the strategic behaviour of companies. The group also assesses competition policy institutions and rules from the perspective of innovation economics and policy.

The group’s cooperation with the University of Mannheim’s School of Law and Economics in their joint initiative, the Mannheim Centre for Competition and Innovation (MaCCI), is particularly significant. In March 2018, the group jointly hosted the seventh edition of the annual MaCCI conference with about 120 participants from around the world. Leading scholars and industry experts discussed current topics in innovation and competition from economic and legal perspectives. The talks given by Professor Fiona Scott Morton of Yale University and Professor Daniel Zimmer of the University of Bonn were highlights of the event. Professor Scott Morton presented her research on the causes of increased corporate mark-ups. She focused in particular on the influence of US competition policy in recent years, and the resulting increase in market concentration. The former chair of the German Monopolies Commission, Professor Zimmer, spoke on algorithms and discussed the effects of law and regulations related to competition. In other sessions, researchers presented recent results in the fields of economics and law. Of particular interest were the sessions on currently controversial issues such as bilateral markets and platform competition, and on buying power and vertical competition restraints.



“Effectively regulating financial markets requires a thorough understanding of the behaviour of institutional and private market actors.”

// Dr. Tabea Bucher-Koenen, head of the research department
“International Finance and Financial Management”





RESEARCH DEPARTMENT

INTERNATIONAL FINANCE AND FINANCIAL MANAGEMENT



RESEARCH AREAS

- **Bank Management and Financial Regulation**
Dr. Karolin Kirschenmann
- **Household Finance and Real Estate**
Dr. Tabea Bucher-Koenen

HEAD

Head

Dr. Tabea Bucher-Koenen

Deputy head

Dr. Karolin Kirschenmann

MISSION STATEMENT

The Research Department “International Finance and Financial Management” investigates how market structures can be improved, both internationally and within Germany and Europe. The department carries out empirical research to provide regulators and policymakers with evidence-based solutions. In addition to examining the regulation and behaviour of international and European capital markets, researchers in this department study the financial decision-making of households. The joint consideration of different perspectives enables capital markets to be studied both from the supply and demand sides of the economy.

1

RECAPNET 2018

- The tenth annual ReCapNet conference took place at ZEW
- David Geltner (MIT) presented on liquidity and the real estate market

Welcoming 33 guests from around the world, the interdisciplinary conference “Real Estate and Capital Markets” (ReCapNet) celebrated its tenth anniversary in November 2018. The presentations at this year’s event focused on pricing, liquidity, and transparency in real estate markets.

To what extent do house prices depend on the prices of other properties? Why are there differences between the list price of a house and the transaction price? And how much power do project developers have in certain real estate markets? These and other questions were analysed and discussed in the presentations given at the conference.

David Geltner, professor of real estate finance at the MIT Center for Real Estate, gave the keynote address. He discussed how liquidity in the real estate market can be explained by the different price expectations of sellers and buyers. David Geltner and his co-authors concluded that the demand side is primarily responsible for price developments. Furthermore, price trends depend on reservation prices, i.e. the highest price that a buyer is willing to pay and the lowest price at which a seller is willing to sell, both of which are unknown. The team developed a new method for measuring these reservation prices and tracking price changes using two indexes. Focussing on seven major markets in the United States, the resulting indexes are regularly updated and publicly available at MIT’s Price Dynamics Platform.

IN 2018, RECAPNET
CELEBRATED ITS

10TH
ANNI-
VERSARY



SAVE THE DATE

The 11th ReCapNet conference will be held on 14 and 15 November 2019 on the topic of “Real Estate Asset Pricing”.

www.zew.de/VA2816-1

2

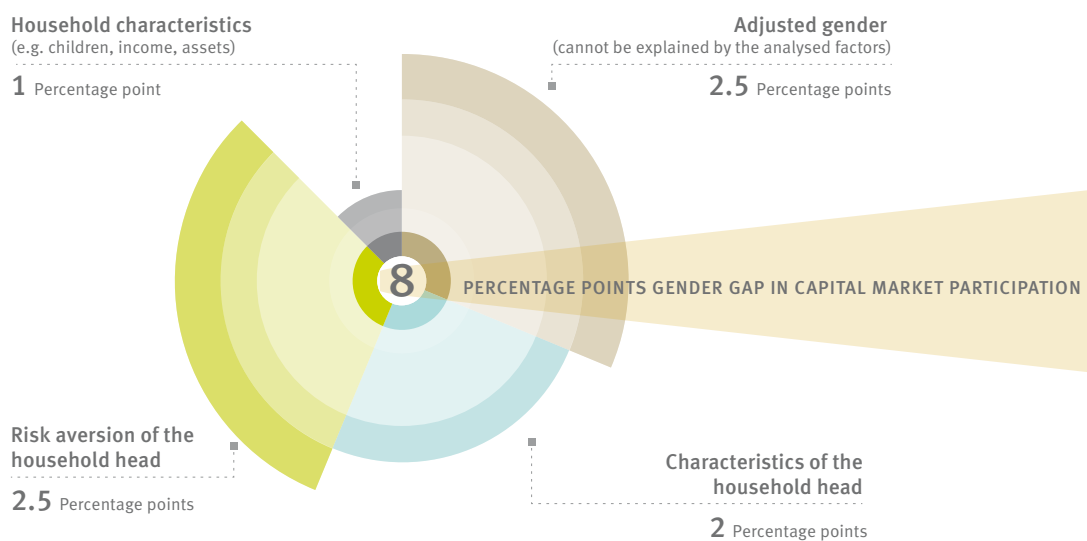
CAPITAL MARKET PARTICIPATION DETERMINED BY RISK PREFERENCE

- Women are less likely to make risky investments
- About a third of the gender gap can be explained by risk aversion

Why do women invest in stocks less than men? Representative data from the German Bundesbank shows that 26 per cent of men and 18 per cent of women make risky investments. In a joint project with ING Diba AG, the research department determined that nearly a third of the gender gap in capital market participation can be attributed to differing levels of risk preferences. Nearly 40 per cent of the gap can be attributed to socio-demographic differences. The remaining 30 per cent of the gap could not be explained by factors included in the models. Multivariate analysis also showed that men and women with similar risk preferences invested in risky assets at a similar frequency. Thus, because of their risk aversion, women tend to invest in less risky bonds and mutual funds.

1 /

DETERMINANTS OF THE GENDER GAP IN THE CAPITAL MARKET



One third of the gender gap in capital market participation can be explained by the high risk aversion among women.
Source: Bundesbank PHF 2014, own calculations.

3

RESTRUCTURING SOVEREIGN DEBT IN THE EUROZONE

- Excessive sovereign debt is a central concern worldwide
 - Focus on designing insolvency proceedings for heavily indebted countries
-

The ZEW-SEEK project “European Network on Better Institutions (ENBI)” created a network of European research institutes that makes regular contributions to the debate on European institutional reform. The network includes economic research institutes (including the Ifo Institute in Munich and the Centre d’Études Prospectives et d’Informations Internationales in Paris), government institutions (such as the German Bundesbank, the European Stability Mechanism and the European Central Bank), and universities (such as the Università Cattolica del Sacro Cuore in Milan). Drawing on insights gained from the European financial and sovereign debt crisis, the network jointly develops recommendations for institutional reform in the eurozone based on the current research of its members.

As part of financial market research for the SEEK-ENBI project, researchers are designing a proposal for a sovereign-debt restructuring mechanism in the eurozone. In June 2018, ZEW organised a two-day conference for international experts on this topic. Dr. Rolf Strauch (chief economist of the ESM) and Professor Massimo Bordignon (Università Cattolica del Sacro Cuore in Milan and the European Fiscal Board) were among those who participated in the talks and panel discussions.

The conference was followed by a workshop where the participants continued to exchange ideas. One outcome of the event was a policy report that outlined insolvency proceedings for heavily indebted countries in the eurozone. This report was presented on 28 March 2019 by ZEW researchers at a ZEW Lunch Debate in Brussels. In addition, a number of contributions on the question of sovereign debt restructuring in the eurozone were collected in an edited volume published together with the ZEW Research Department “Corporate Taxation and Public Finance”. A new research project will examine to what extent GDP-indexed sovereign bonds could help mitigate or reduce sovereign debt crises.





“In times of increasing inequality and political discontent, the tax system of the future will have to be fair as well as efficient.”

// Prof. Dr. Sebastian Siegloch, head of the Research Department
“Social Policy and Redistribution”

RESEARCH DEPARTMENT

SOCIAL POLICY AND REDISTRIBUTION



RESEARCH AREAS

- **Income and Wealth Distribution**
Prof. Dr. Sebastian Sieglöch
- **Tax and Transfer Policy**
Dr. Holger Stichnoth
- **Fiscal Policy and Distribution in Europe**
Prof. Dr. Sebastian Sieglöch

HEAD

Head

Prof. Dr. Sebastian Sieglöch

Deputy head

Dr. Holger Stichnoth

MISSION STATEMENT

Questions of income and wealth distribution and the economic impact of redistribution through tax and transfer systems are controversially discussed. The Research Department “Social Policy and Redistribution” contributes to objectifying this discussion with empirically founded analyses in both a national and international context. A major research focus is on redistribution through tax and transfer systems and associated economic effects. The Research Department’s empirical studies aim to provide a reliable basis for tax and social policy recommendations. The research focus thereby lies on microdata analyses to describe the distribution and efficiency effects of the tax and transfer system, as well as on the identification of causal effects resulting from reforms using a variety of econometric techniques.

1

FAMILY BENEFITS REACH THEIR INTENDED RECIPIENTS

- Children benefit directly from cash transfers to families
- No evidence of systematic misuse of funds by parents for alcohol, cigarettes, or electronics

A recent ZEW study has confirmed that children benefit from government transfer payments such as the child allowance. Contrary to prevailing prejudices, cash benefits are not misused by parents for items such as alcohol, tobacco, and consumer electronics, but are rather used to pay for larger family homes and invested in better childcare, education, and children's hobbies. Furthermore, child allowance schemes do not lead to parents reducing their working hours.

The child allowance study was carried out by ZEW on behalf of the Bertelsmann Stiftung. Using data from Germany's Socio-Economic Panel (SOEP), the study investigated how two forms of child allowance (known as Kindergeld and Landeserziehungsgeld) were used between 1984 and 2016. It reached the following key conclusions. For every 100 euros of child allowance, the likelihood of a child attending a day care centre increases by five per cent. From the year 2000 on, this figure even rises to ten per cent. Early childhood education centres have then clearly become more important to families over time. Likewise, provision of childcare centres and all-day schools has improved over this period. In addition, the child allowance schemes have led to an eight per cent increase in the number of children practicing sports and a similar increase in the number of children taking music lessons (up six per cent for those under six, and eleven per cent for those between six and 16).

Where both forms of child allowance are concerned, there is no evidence that the transfer payments have had any influence on the purchase or possession of electronic goods or on alcohol consumption. In the earlier years of the observation period, there are signs of an increase in tobacco consumption, but this can no longer be observed from 2008 on.

The results therefore show that there is no cause to place parents under general suspicion of misusing child allowance. On the contrary: these payments generally find their way to their intended recipients, namely children. The results of the study also concur with the findings of international studies. Placing more trust in parents ultimately pays off, since cash benefits involve less bureaucracy than funds earmarked for specific purposes, such as educational activities and equipment. In the latter case, up to 30 per cent of all expenditure goes on administration – and that's money that certainly does not find its way to children.



VIDEO

www.zew.de/PM6293-1

2

FIFTH ANNUAL MATAIX CONFERENCE 

- Topics included tax avoidance and inequality
- Keynote talks by Michelle Hanlon (MIT) and Wojciech Kopczuk (Columbia University)

How does the tax system of the future need to be structured to cope with new economic and social challenges at the national, European, and global levels? This is the focus of the research undertaken at the Leibniz ScienceCampus Mannheim Taxation (MaTax) – a joint initiative of ZEW and the University of Mannheim. In 2018, the fifth annual MaTax conference was held in Mannheim. With 36 talks across twelve sessions and around 80 attendees from across the world, the conference hosted many exciting discussions on a range of tax-related topics. The keynote talks were given by Professor Michelle Hanlon of MIT and Professor Wojciech Kopczuk of Columbia University.

MaTax

The aim of the Leibniz ScienceCampus “**Mannheim Taxation**” (MaTax) is to promote interdisciplinary research on taxation and fiscal policy. It also provides a forum for academic discussion between researchers and decision-makers in the spheres of politics, business, and tax administration. MaTax is a joint initiative of ZEW and the University of Mannheim.



WEBSITE

More information:
www.matax.eu

3

ANNUAL PENSION LETTERS SPUR GREATER INVESTMENT IN PRIVATE PENSIONS

- Pension information letters lead to an increase in Riester savings
- Earned income also on the rise

The information letters sent out annually by Germany's pension authorities have served to significantly increase investment in private pension schemes, as well as spurring an increase in earned income. These are the key findings of a ZEW study published in the renowned *Journal of Public Economics* in 2018.

While ever more people are receiving pensions over ever longer periods, Germany's pay-as-you-go pension system is coming under increasing pressure. In order to improve pension provision across Germany and expand additional private savings schemes, it is crucial to disseminate transparent information on alternatives.

Using data from the Federal Statistical Office's taxpayer panel, which is based on annual income tax statistics, ZEW researchers analysed the impact of the pension information letters that were first introduced in the year 2005. The letters are sent to all those over 27 who have been paying into the public pension

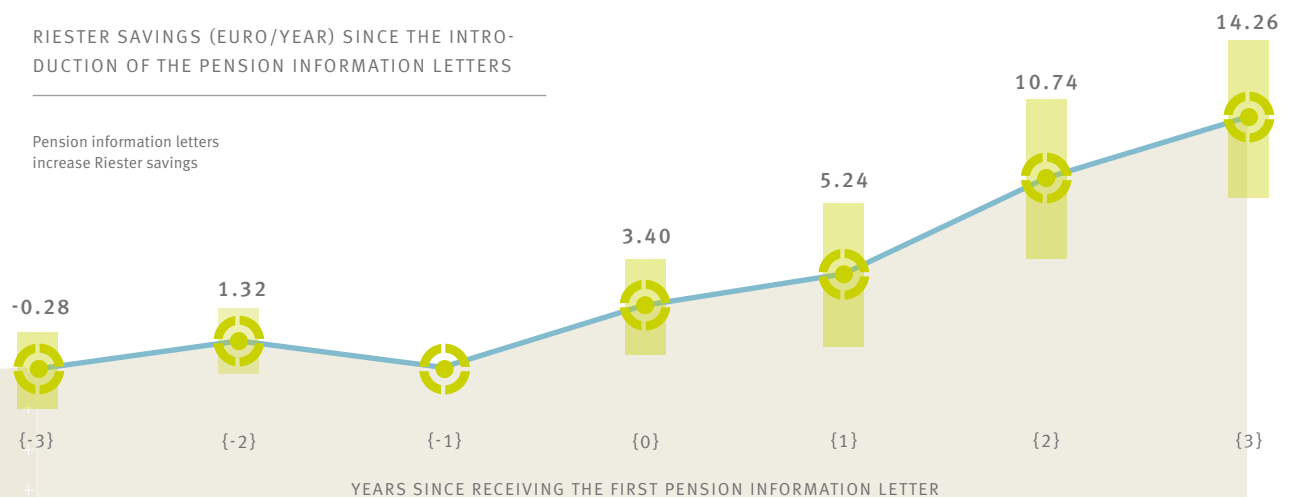
system for a period of at least five years. Before the introduction of the letters, only those over 55 received a "pension certificate" containing detailed information on their existing pension entitlements and expected pension levels.

Exploiting the staggered introduction of the letters for the identification of causal effects, the team of ZEW researchers finds that in the observation period of 2001 to 2010, investment in Germany's private pension savings model known as the "Riester-Rente" increased following the introduction of the letters. An average rise of 15 euros per year was observed across all members of the pension system. A good five per cent of Riester savings over this period can be attributed to the information letters. Earned income, which contributes to raising pension levels, also increased, with gross income rising by an average of 1,100 euros per year.

1 /

RIESTER SAVINGS (EURO/YEAR) SINCE THE INTRODUCTION OF THE PENSION INFORMATION LETTERS

Pension information letters increase Riester savings







“The digitalisation of transport services and the introduction of smart traffic management solutions are set to make transport not just greener, but also more efficient.”

// Prof. Achim Wambach, PhD, acting head of the Research Department “Environmental and Resource Economics, Environmental Management”, and deputy head Dr. Sebastian Voigt

RESEARCH DEPARTMENT

ENVIRONMENTAL AND RESOURCE ECONOMICS, ENVIRONMENTAL MANAGEMENT



RESEARCH AREAS

- **Energy Economics and Mobility**
Energy Economics: Dr. Oliver Woll
Mobility: Dr. Wolfgang Habla
- **International Environmental and Resource Policies**
Prof. Dr. Martin Kesternich
- **Innovation and Sustainable Development**
Prof. Achim Wambach, PhD
- **Macroeconomic Analysis of Environmentally Relevant Policies**
Dr. Theodoros Chatzivasileiadis

MISSION STATEMENT

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

HEAD

Acting head

Prof. Achim Wambach, PhD

Deputy head

Prof. Dr. Martin Kesternich

Dr. Sebastian Voigt

Acting deputy head

Kathrine von Graevenitz, PhD

1

HOW DO WE ENSURE A SUCCESSFUL GREEN TRANSFORMATION?

- The economic, social, and technological factors to be addressed in the green transformation
- The consequences of uncertainty and redistributive effects

In essence, the green transformation consists in establishing a low-emissions society that uses resources as sparingly as possible. This goes hand in hand with reducing resource usage in industry and among consumers. In order to successfully implement the green transformation, we need to give equal consideration to the economic, social, and ecological factors involved. The ZEW project, “Integrated Assessment of a Green Transformation: An Assessment of Economic, Social, and Technological Transformation Pathways” (InTrans), funded by Germany’s Federal Ministry of Education and Research, aimed to identify successful pathways toward an ecologically and socially sustainable economy.

This interdisciplinary project brought together researchers from philosophy, economics, and sociology. It focussed on the effects of uncertainty and redistribution on the green transformation. Uncertainty concerning technological transformation pathways has exacerbated uncertainty over climate protection progress, while also impacting investment decisions.

Nevertheless, the possibility of long-term cost reductions may well lead to a more rapid expansion of renewables. A further significant factor is uncertainty over individuals’ commitment to the green transformation. If this can at least partially be overcome by means of appropriate institutions, we can ensure a greater contribution toward the public good and climate protection.

Furthermore, the usual indicators used to gauge the “procedural justice” of redistributive measures would seem insufficient here, making a detailed consideration of principles of justice indispensable. In this connection, the project focussed on the effects of current energy policies on lower-income households. In general, wealthier households tend to use more resources. Households that already use low levels of electricity, by contrast, have little to gain from building weatherisation or other efficiency measures. Low-income households are also disproportionately impacted by rising electricity prices. In addition, electricity service tends to be cut off more frequently from poorer households – a situation that can be exacerbated by existing household debt burdens.

The InTrans project therefore shows that uncertainty and redistributive effects have to be addressed in any green transformation in order to ensure widespread acceptance among the population and the long-term effectiveness of the relevant measures.



WEBSITE

<https://kooperationen.zew.de/en/intrans/home.html>

2

SUSTAINABLE CORAL REEF MANAGEMENT IN INDONESIA

- Large stretches of coral reef are exposed to destructive forces
 - Allocating quotas to change local fishing behaviour
-

The coasts of Southeast Asia are among the most coral-rich areas in the world. They are home to tropical coral reefs that are crucial for the local ecosystem – providing a habitat for countless species of fish, protecting the coastline, offering a recreational area for tourists, and supporting a huge range of animal species. Large stretches of coral reef are nonetheless exposed to destructive forces brought about by a range of actors.

An interdisciplinary project funded by the Leibniz Association aimed to gain a deeper understanding of how incentives for local fishermen need to be structured if they are to embrace fishing practices that promote sustainable reef management. The project focussed on the allocation of fishing quotas – a regulatory tool increasingly regarded as an effective means of countering overfishing among local resource users. Nevertheless, little research has been carried out on the underlying behavioural patterns involved – and particularly whether the way in which quotas are allocated affects the likelihood of their being observed.

The project researchers pursued this question in relation to the Indonesian island of Sulawesi, where international organisations are already at work on allocating exclusive fishing rights to protect the local tropical coral reefs. Working closely with an environmental organisation, the researchers investigated decision-making behaviour among resource users in three different fishing communities on Sulawesi. They used experimental economic methods to test whether the effectiveness of the quotas depended on whether they were allocated via a democratic process or by a local or external authority.

On average, the results in all three regions showed that quotas issued as part of a democratic process or by an external authority were more likely to promote sustainable resource usage. These findings were nonetheless strongly influenced by the local context. The study was published in 2018 in the peer-reviewed journal *Ecological Economics*.

3

ZEW WORKSHOP ON THE CHALLENGES AND OPPORTUNITIES OF A LOW-EMISSIONS TRANSPORT SECTOR

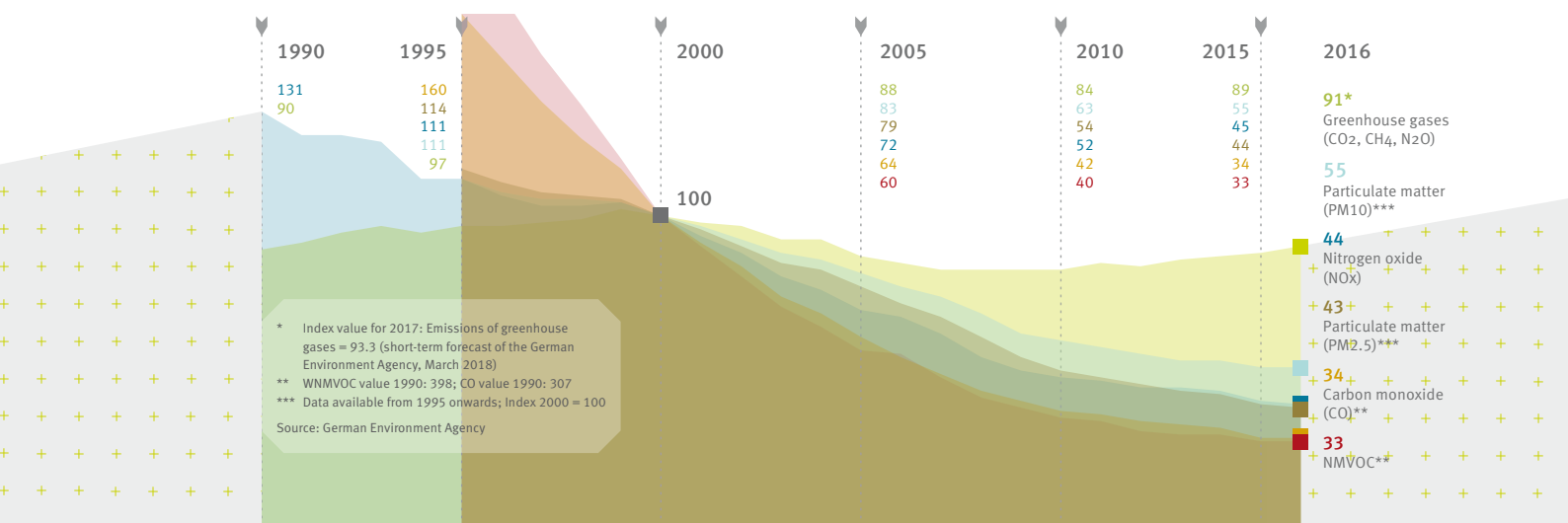
- The transport sector is a hot button issue in public and political debate
- New technologies and forms of mobility play a key role in the discussion

The transport sector is one of the few economic sectors in Germany in which CO₂ emissions are on the rise again and in which local emissions reductions have not met expectations. A ZEW workshop on the challenges and opportunities of a low-emissions transport sector brought together 35 experts from the fields of academia, politics, and the transport sector for a series of intensive discussions on new technologies such as electric vehicles and driverless cars, and new services such as car and ride sharing. The participants underlined the importance of rapidly charting a course toward sustainable urban mobility and developing tailor-made political measures such as road use tolls and improved parking management.

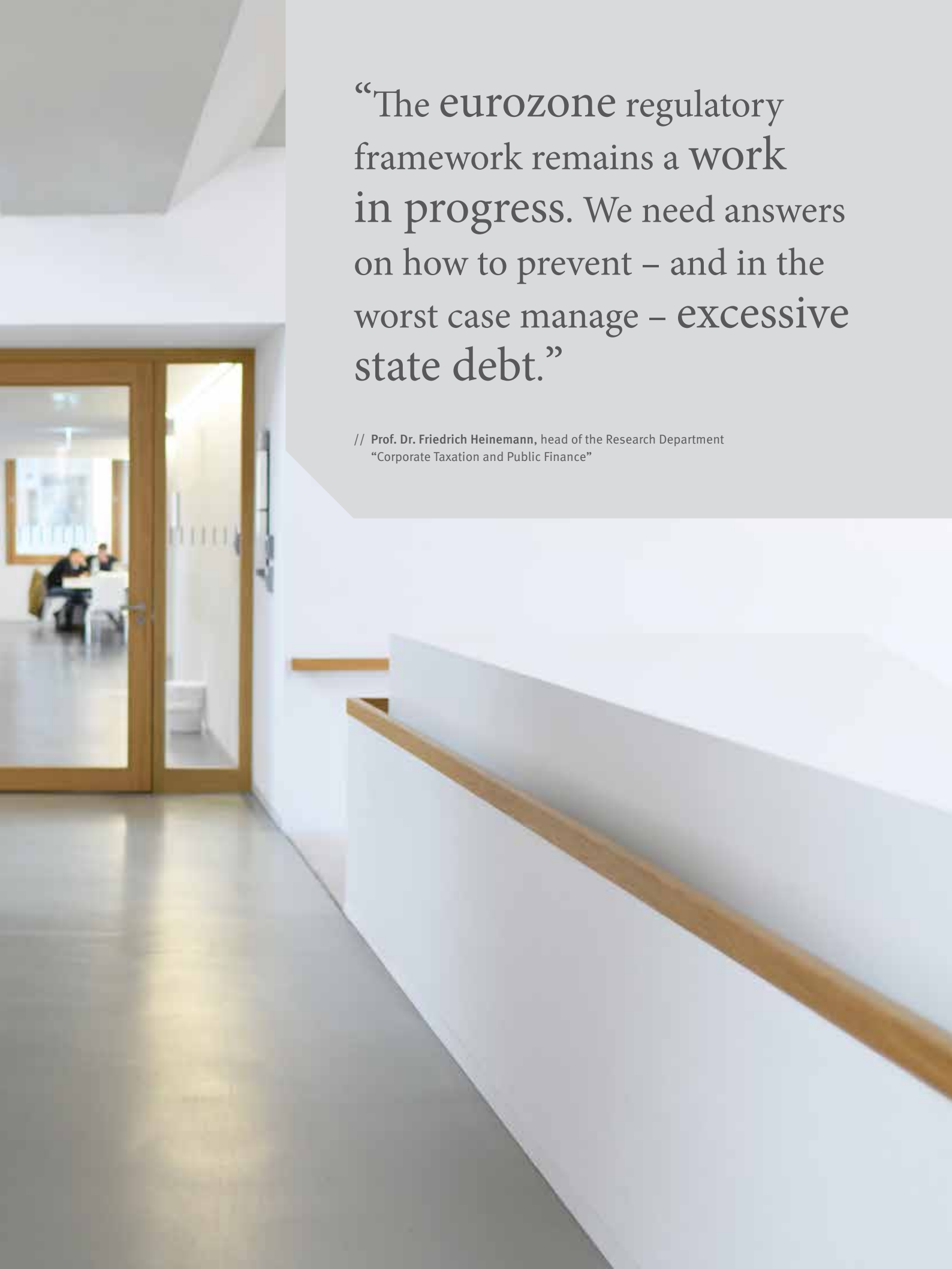
The workshop also hosted many renowned scientists from France, the Netherlands, Austria, Sweden, and the US. They addressed topical issues such as promoting electric vehicles, traffic management in inner cities, the growing demand for courier services, measures to improve air quality, and the impact of the sharing economy. The first day of the workshop was devoted to scientific talks, while the second featured discussion between scientists and practitioners in two panel debates. The first of these addressed the upcoming “transport sector revolution” and was moderated by ZEW environmental economist Dr. Wolfgang Habla. The second was devoted to political measures to promote urban mobility and saw Professor Martin Kesternich, deputy head of the research department, put a range of critical questions to the panel.

1 /

EMISSIONS OF SELECTED AIR POLLUTANTS AND GREENHOUSE GASES IN THE TRANSPORT SECTOR







“The eurozone regulatory framework remains a work in progress. We need answers on how to prevent – and in the worst case manage – excessive state debt.”

// Prof. Dr. Friedrich Heinemann, head of the Research Department
“Corporate Taxation and Public Finance”

RESEARCH DEPARTMENT

CORPORATE TAXATION AND PUBLIC FINANCE



RESEARCH AREAS

- **Corporate Taxation and Tax Location Analysis**
Daniela Steinbrenner
- **Empirical Effects of Corporate Taxation**
Prof. Dr. Katharina Nicolay
- **Decision-Making in Tax and Financial Policy**
Prof. Dr. Friedrich Heinemann
- **Fiscal Policy, Fiscal Federalism and Economic Performance**
Dr. Zareh Asatryan
- **Junior Research Group
Economics of Public Procurement**
Leonardo Giuffrida, PhD

HEAD

Head

Prof. Dr. Friedrich Heinemann

Deputy head

Dr. Zareh Asatryan

Deputy head

Prof. Dr. Katharina Nicolay

Head of the Junior Research Group

Leonardo Giuffrida, PhD

MISSION STATEMENT

The “Corporate Taxation and Public Finance” Research Department addresses questions related to corporate taxation and empirical public economics within the context of European integration. The overarching research topics addressed by the department are optimal tax system design and European fiscal institutions. The department is unique in combining approaches from the fields of business administration (particularly corporate taxation) and public finance, and its tax analysis models have made it a European leader in comparing international tax burdens. Special attention is devoted to European integration processes through the analysis of corporate tax harmonisation and EU fiscal institutions. The department’s research agenda generates concrete tax and fiscal policy recommendations, thus supporting ZEW’s guiding aim of studying and designing well-performing markets and institutions in Europe. It also contributes to ZEW’s overarching research on market design through its particular expertise in public procurement.

1

ANALYSIS OF THE 2018 US TAX REFORM 

- Effective corporate tax rate falls by around ten per cent in the USA
- Urgent need for action on taxation policy in Germany

On 1 January 2018, an extensive US corporate tax reform (the Tax Cuts and Jobs Act) came into force for the first time since 1986. The research department undertook a very early and high-profile analysis of the reform, which examined its impact on effective tax rates. On the basis of this analysis, further studies were carried out, including economic assessments of the Act's consequences for direct investment and an in-depth analysis commissioned by the Bavarian Industry Association (vbw). Alongside a reduction in the corporate tax rate from 35 to 21 per cent, the reform includes a number of other incentives that aim to raise the country's attractiveness to businesses. Tax rates have been slashed on income from patents, for example, while dividends from subsidiary companies are now fully exempt. This brings the US into line with prevailing international exemptions.

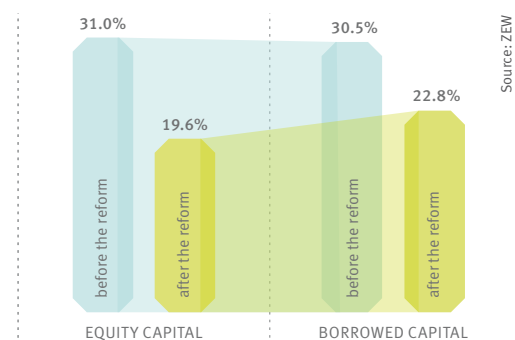
The department's studies focussed on the impact of the reforms on US investment by German companies. The drastic reduction in the corporate tax rate alters the optimal financing method for such investment (see Figure). Since interest is tax deductible in principle, the high corporate tax rates prior to the reform meant that it was slightly more advantageous to finance US investment using borrowed capital. The effective average tax rate (EATR) before the reform was 30.5 per cent for investment financed via borrowed capital, and 31 per cent for investment financed via equity capital. Following the reform, the EATR for equity capital investment has fallen significantly to 19.6 per cent, compared to 22.8 per cent for borrowed capital.

Combining Eurostat data with estimates in the empirical literature, the department assessed the potential effects of these changes to the EATR on the volume of US investment by German companies. According to the study, the ten per cent reduction in the EATR is expected to lead to a rise in direct investment in the US by German companies of around 25 per cent.

From a tax perspective, the US has thus significantly raised its attractiveness to businesses, which may have positive macroeconomic effects. At the same time, there is a growing need for concerted action on tax policy in Germany. This need is all the more acute insofar as other EU Member States such as France have passed extensive corporate tax reforms.

1 /

EATR FOR INVESTMENTS OF GERMAN COMPANIES IN THE USA



2

DIVIDING RESPONSIBILITIES BETWEEN THE EU AND ITS MEMBER STATES

- Common defence and development policies would benefit all EU states
- Agricultural policy should fall under the remit of individual Member States

How should responsibilities be divided between the EU and its Member States in future? This question was addressed from the perspective of federalist economic theory in an extensive empirical study undertaken in collaboration with the Bertelsmann Stiftung. The study examined eight policy fields, from common agricultural policy to the idea of a common corporate tax base. The results speak in favour of increased federalism in defence and development policy. Responsibility for direct payments to farmers, by contrast, would better be returned to individual Member States.

WHO SHOULD BE RESPONSIBLE FOR WHAT – THE EU OR THE MEMBER STATES?

	Criteria based on the theory of fiscal federalism					Optimal allocation
	Spillover effects	Economies of scale	Preference heterogeneity	Internal market	Competition	
Agricultural policy	1	1	3	3	2	Member States
Asylum policy	5	4	5	5	4	EU
Corporate taxation	4	4	4	5	4	EU
Defence	4	4	5	5	5	EU
Development aid	4	5	5	3	4	EU
Education	2	1	4	3	3	Member States
Railway freight transport	2	4	4	4	3	indifferent
Unemployment insurance	5	3	4	3	4	EU (eurozone)

Point scale from 1 to 5. High (low) values provide argument for (against) allocating competencies to the EU.

Source: Bertelsmann Stiftung and ZEW

In January 2018, **Professor Friedrich Heinemann** was invited to a high-level conference attended by EU Commission President Jean-Claude Juncker, EU Budget Commissioner Günther H. Oettinger, and German Foreign Minister Sigmar Gabriel, in order to advise on the next EU financial framework. Drawing on his research, his talk showed where common European action would be beneficial and where it would not.



VIDEO

<https://youtu.be/UtQm8Gy92lk>

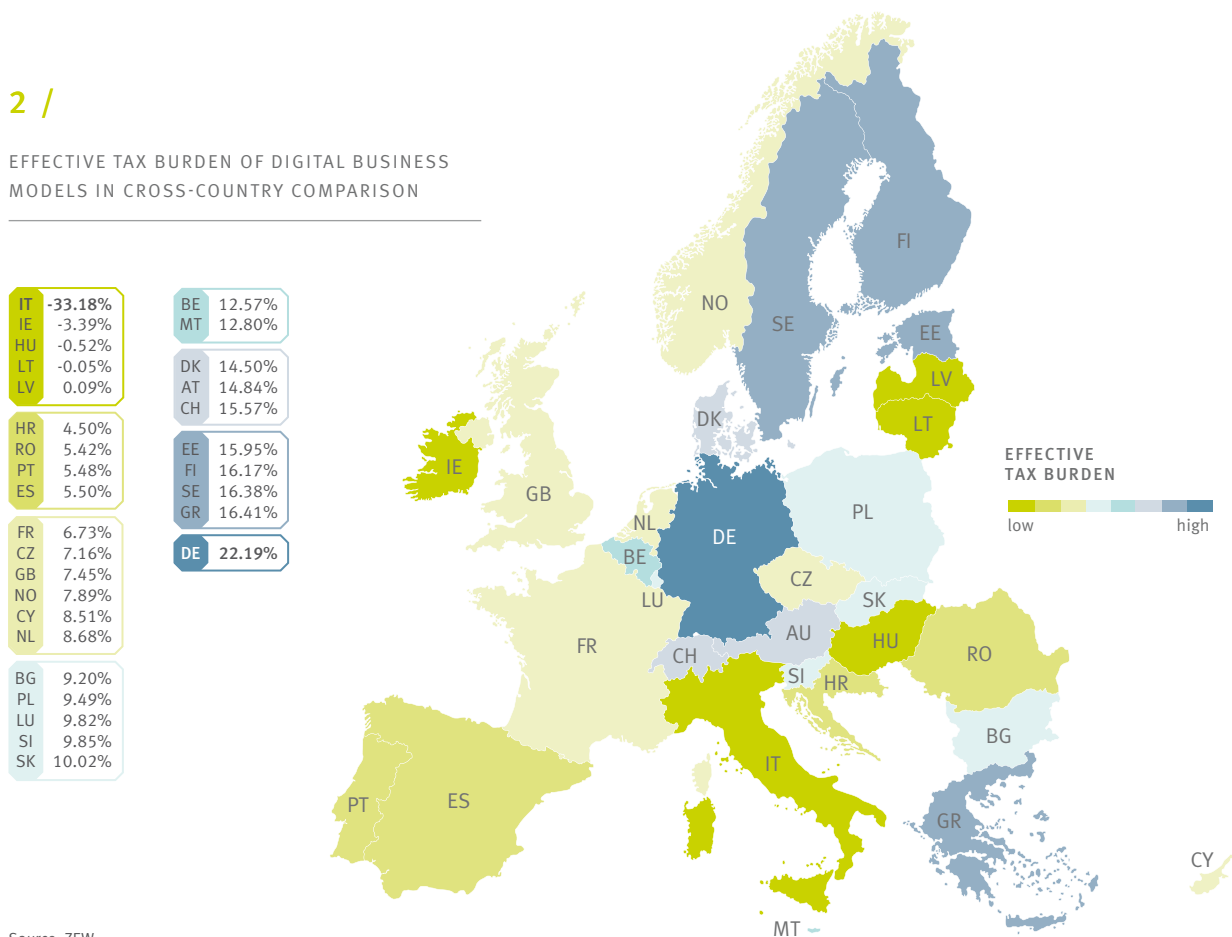
3 TAXATION CHALLENGES IN THE ERA OF DIGITAL TRANSFORMATION

- Huge tax rate differentials for digital business models
- Digital businesses benefit significantly from tax incentives to promote research

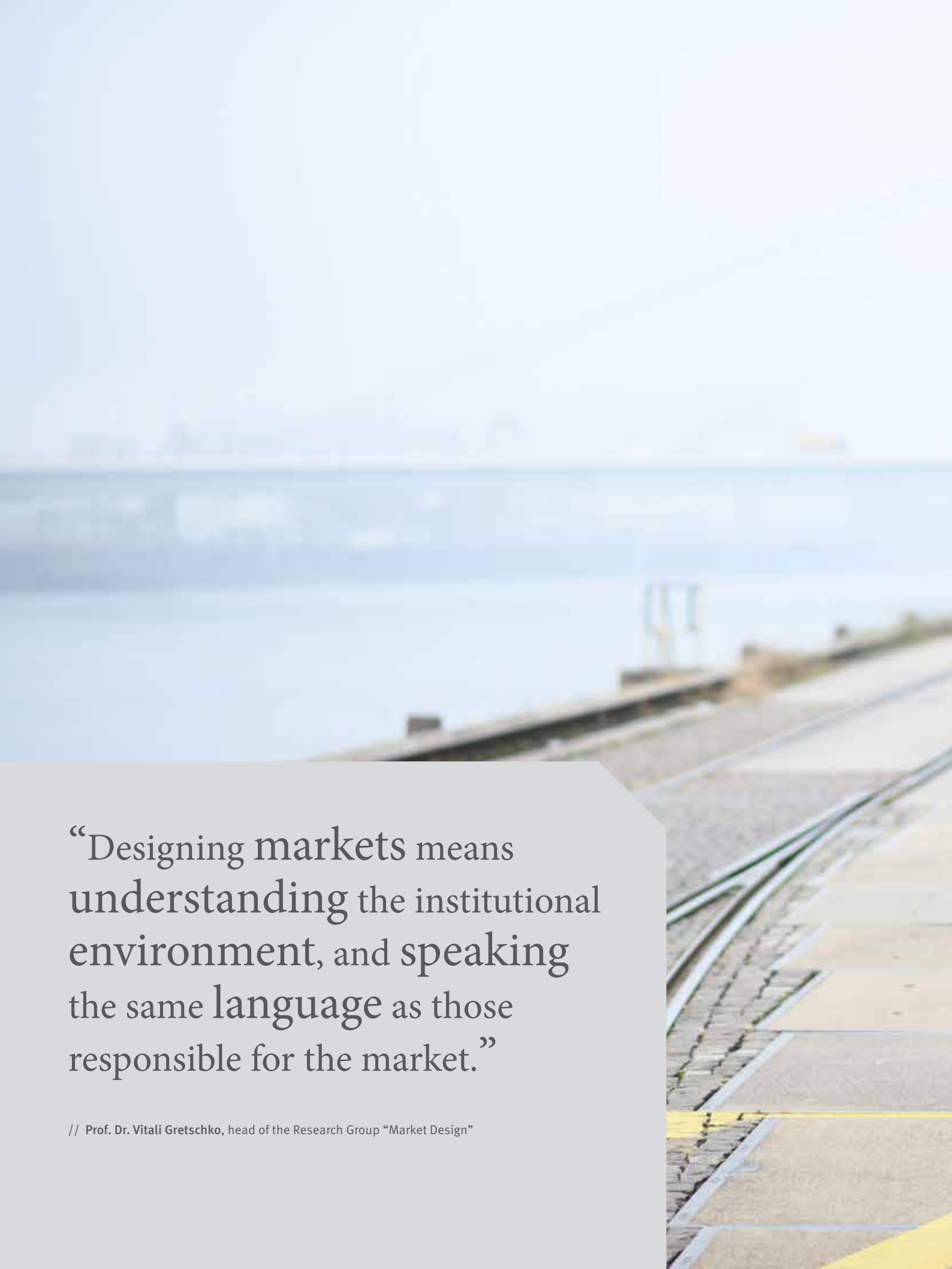
The digital transformation continually gives rise to new business models that hinge on the collection, analysis, and strategic use of data.

Using its own taxation digitalisation index, the department analysed the local taxation environment as a key factor for investment in digital businesses. Where effective tax rates for such businesses are concerned, Italy, Ireland, and Hungary proved to be the most attractive locations. Of the 33 countries studied, Germany scored most poorly.

2 / EFFECTIVE TAX BURDEN OF DIGITAL BUSINESS MODELS IN CROSS-COUNTRY COMPARISON



Source: ZEW



“Designing markets means understanding the institutional environment, and speaking the same language as those responsible for the market.”

// Prof. Dr. Vitali Gretschko, head of the Research Group “Market Design”



RESEARCH GROUP

MARKET DESIGN



RESEARCH AREAS

- **Auction Market Design**
Dr. Nicolas Fugger
- **Design of Matching Markets**
Prof. Dr. Thilo Klein

HEAD

Head

Prof. Dr. Vitali Gretschko

Deputy head

Dr. Nicolas Fugger

MISSION STATEMENT

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

1

OPTIMISING THE ASSIGNMENT OF DAYCARE PLACES

- In-house software ensures transparent place assignment in North Rhine-Westphalia
- The speed, transparency, and flexibility of place assignment has been praised by day-care facilities

The goal of this pilot project – a joint venture launched by ZEW and a municipality in the German state of North Rhine-Westphalia (NRW) in the summer of 2018 – was to develop a fast, transparent, and fair process for assigning day-care places that would give day-care facilities the same level of decision-making freedom as a decentralised assignment process.

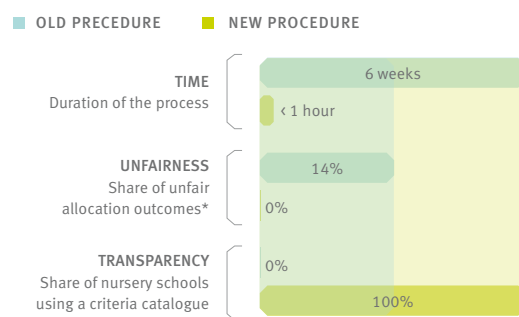
Previously, the municipality relied on the commonly used Boston mechanism. Parents would fill out a registration form indicating their preferred day-care facilities, and then drop the form off at their first-choice facility by a specific deadline. That day-care facility would determine which children it can offer places to, and then send the rest of the registration forms by post to the second-choice facilities indicated on the forms. This process is slow, complex, and requires strategic behaviour on the part of parents. If parents submit their form to a particularly popular day-care facility, they may not be awarded a place at that facility, or at their second and third choice, because all the places are often filled in the first round.

To improve the process as well as increase transparency and fairness at the same time, ZEW developed a proprietary software to award day-care places in 2018. In the first step, the software applies day-care facility criteria to select the children initially awarded a place at each facility. In the second step, the heads of all seven day-care facilities meet for a “matching day”. Here the rest of the places are awarded in a single afternoon instead of over many weeks. The facilities make the children virtual offers that are automatically

accepted or rejected. Since the parents have already indicated their preferences on the registration forms, the software can make these decisions for them. The process ends after about an hour once all the day-care facilities are full or no suitable candidates remain. The process was so successful that other municipalities have expressed interest in using the software as well.

1 /

COMPARISON BETWEEN OLD AND NEW PROCEDURE FOR THE ALLOCATION OF NURSERY SCHOOL PLACES



Source: ZEW

* Share of children that should have received a place according to the nursery school's criteria but did not due to the procedure applied.

2

MACCI LAW AND ECONOMICS CONFERENCE AM ZEW

- Economists, lawyers, and practitioners discuss market design
- Dynamic tolls can reduce traffic congestion

In cooperation with the University of Mannheim, the research group organized the MaCCI Law and Economics Conference on market design in November of 2018. The conference participants discussed the practical applications of theoretical concepts for concrete market rules, and considered the legal framework conditions. The programme included four panel discussions and two keynote presentations. In the panel discussions, scholars of economics and law as well as users considered online platforms, public procurement, energy markets, and health markets. The two keynote presentations analysed specific markets and their design. Professor Kimberly Krawiec of Duke University presented a paper on organ donation organisation and its legal restrictions. Professor Peter Cramton of the University of Cologne and the University of Maryland discussed how dynamic toll systems can prevent road congestion.



WEBSITE

Further information:
www.macci.eu



The Leibniz ScienceCampus “**Mannheim Center for Competition and Innovation**” (MaCCI) is a joint initiative of ZEW and the School of Law and Economics at the University of Mannheim. MaCCI brings together researchers at ZEW and the University of Mannheim who specialise in competition, regulation, and innovation. It also initiates projects that straddle the fields of law and economics. The MaCCI conference is an internationally recognised forum fostering dialogue between theory and practice.

3

UNIFYING SCHOOL ADMISSIONS IS A GOOD IDEA

- Combining school districts reduces ethnic segregation in schools
- Students and schools positively rated location assignment after the districts were combined

In most of the world's cities, schoolchildren are assigned to school by catchment areas. There are advantages and disadvantages to this system. A major advantage is that children are never assigned a school that is too far away from where they live. But because of housing segregation, schoolchildren are often assigned to a school where most of the children have the same ethnic background as they do. The result is highly segregated schools. In the US, about 80 per cent of ethnic segregation is between public school districts, not within them.

To reduce ethnic segregation, several cities have introduced unified school admission systems either on their own authority or under court order (see illustration). These initiatives were often greeted by scepticism in the schools. In Washington, D.C. for example, 16 schools opted out of the centralised admission system. Since 2000, 71 communities have attempted to eliminate their school districts (47 have succeeded). Schools are reluctant to accept centralised admissions systems because they believe it will result in larger numbers of less qualified students attending their schools.

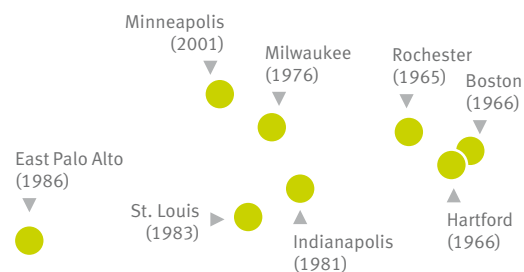
In a recent article in the *Journal of Mathematical Economics*, ZEW's Josué Ortega, PhD demonstrated that integrating school districts benefits both students and schools in two ways. First, the number of students assigned to a better school after the school districts

were combined is always larger than the number assigned to a worse school. Second, the average rating given to school assignment by both students and schools increased after the districts were combined. Surprisingly, the schools benefitted even more than the students. The reason is that in many areas, schoolchildren were assigned a school using the Gale-Shapley algorithm. The algorithm ensured that among the schools available, the children attended the best school for them. The algorithm was developed by Nobel Prize winners Lloyd Shapley and Alvin Roth, and is used across the globe.

In conclusion, combining school districts is highly controversial. But it reduces ethnic segregation in schools while at the same time improving the rating given to school assignment by both schools and schoolchildren.

2 /

EXAMPLES OF US CITIES WITH INTEGRATED SCHOOL DISTRICTS



Source: http://charleshiltonhouston.org/wp-content/uploads/2013/06/Wells_BoundaryCrossing.pdf

DEMOGRAPHIC CHANGE

HOW DO WE INVEST THE RIGHT WAY?

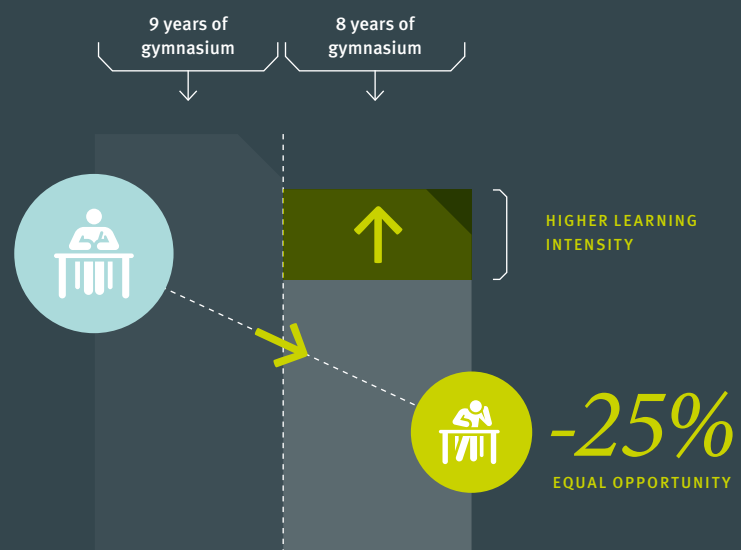
THE CHILD ALLOWANCE – DOES IT BENEFIT CHILDREN? ¹

A study by ZEW and Bertelsmann has found that children gain from child allowances and other cash transfers from the state. For every 100 euros in child allowance that a family receives, children are more likely to see the benefits shown in the figure on the right ...



HIGHER LEARNING INTENSITY MEANS LESS EQUAL OPPORTUNITY IN EDUCATION ²

As part of Germany's G8 reforms, gymnasium students now spend 8 years at secondary school instead of 9. This has increased learning intensity, but it has also decreased equal opportunity among students – by up to 25% according to recent ZEW estimates.



Sources:

1 | ZEW and Bertelsmann (2018): "Kommt das Geld bei den Kindern an?"

(<https://www.bertelsmann-stiftung.de/de/themen/aktuelle-meldungen/2018/november/gegen-armut-geld-fuer-familien-kommt-bei-kindern-an/>)

2 | ZEW Discussion Paper (2018): "Inequality of Educational Opportunities and the Role of Learning Intensity: Evidence from a Quasi-Experiment in Germany" (www.zew.de/PU79955)

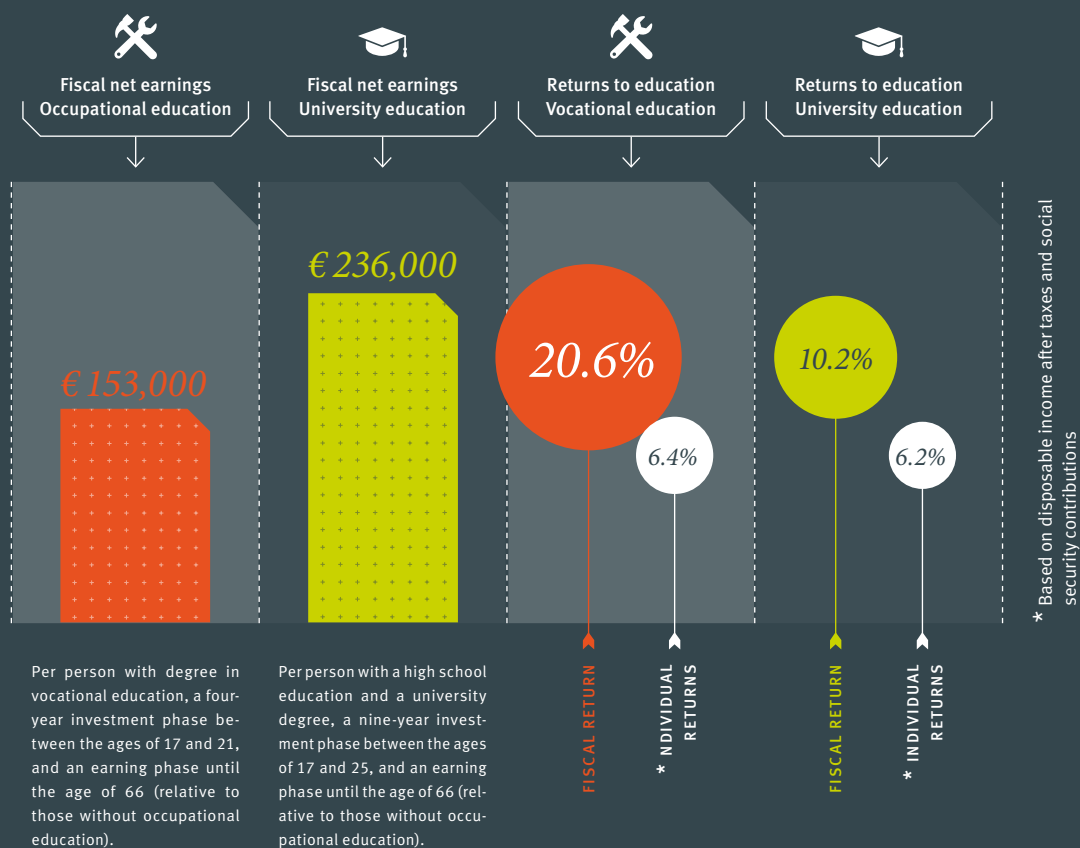


DISTRIBUTIONAL EFFECTS OF THE REFORMS PLANNED BY GERMANY'S GRAND COALITION ³



The above numbers reflect the following reforms: planned increase to exemption limit for the solidarity surcharge, increase to child allowance and the child tax credit, reduced contribution to unemployment insurance, equal split of health insurance contributions between employees and employers, expansion of the “midijob” zone, and the elimination of the upper income limit for the child supplement.

FISCAL AND INDIVIDUAL NET EARNINGS AND RETURNS TO EDUCATIONAL INVESTMENT IN YOUNG ADULTS ⁴



Per person with degree in vocational education, a four-year investment phase between the ages of 17 and 21, and an earning phase until the age of 66 (relative to those without occupational education).

Per person with a high school education and a university degree, a nine-year investment phase between the ages of 17 and 25, and an earning phase until the age of 66 (relative to those without occupational education).

³ | ZEW calculations (<https://www.zew.de/PM5677-1>)

⁴ | ZEW Discussion Paper (2018): “Fiskalische und individuelle Nettoerträge und Renditen von Bildungsinvestitionen im jungen Erwachsenenalter” (<https://www.zew.de/PU80282>)
ZEW research liaisons: Dr. Holger Stichnoth, PD Dr. Friedhelm Pfeiffer, and Sebastian Camarero Garcia



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ZEW ACROSS ITS ENTIRE SPECTRUM

- 0100 → ... in the Media
- 0102 → ... in Dialogue with the Public
- 0104 → ... in Dialogue with Science
- 0105 → ... Gets High School Students Interested in Economics
- 0106 → Focus on “Climate Change and Energy Transition” 
- 0108 → ... Opens Doors to New Career Opportunities
- 0112 → ... Cares About Corporate Social Responsibility
- 0114 → ... Promotes Professional Development
- 0115 → ... Inspires Passionate Support: the ZEW Sponsors' Association

... IN THE MEDIA

Europe, digitalisation, wealth redistribution, innovation, climate change, taxes, artificial intelligence, the future of work – these are just some of the areas in which ZEW economists provide expertise and inform public opinion.

Google would be well advised, instead of playing defence, to take an active part in discussions on fair practices in the Digital Age and to modify its behaviours accordingly.

Professor Achim Wambach, on the second EU antitrust fine for Google, Die Welt (19 July 2018)

As the ECB continues to buy more and more bonds from highly indebted European states, it increasingly falls short of its stated goal: to make purchase decisions based on the ECB capital key.

Professor Friedrich Heinemann, on the ECB bond buying programme, Frankfurter Allgemeine Zeitung (22 January 2018)

According to cross-country comparisons, Germany's performance with respect to digitalisation is only moderate. Germany needs to do better.

Professor Irene Bertschek, on the ZEW/Kantar TNS studies examining digitalisation in German industries and service sectors, Handelsblatt (12 June 2018)

Alack of subsidies for companies with fewer than 1,000 employees hurts German economic competitiveness.

Professor Bettina Peters, on the results of a ZEW study examining the decline of innovation among medium-sized companies in Germany, Handelsblatt (6 April 2018)

The challenges posed by an emerging China, an unstable Russia, and an erratic US calls for more unity among European countries, not less.

Professor Achim Wambach, on Brexit and the relations between the EU and the UK, Süddeutsche Zeitung (24 September 2018)

Global industries affected by decreasing exports would receive most of their emission credits for free.

Dr. Sebastian Voigt, on derogations from the EU plans to strengthen its emissions trading scheme, Staatsanzeiger (16 March 2018).

Ownership is becoming more flexible and profits are moving to other areas.

Professor Irene Bertschek, on the new business models from digitalisation, Brand Eins (23 November 2018)

Do robots and intelligent machines eliminate jobs or create new ones? This question regularly elicits passionate debate. Based on what we know today, the answer is both.

Frankfurter Allgemeine Zeitung (5 April 2018), on the results of the ZEW study "Digitalisation and the Future of Work," by Professor Melanie Arntz, Dr. Terry Gregory, and Dr. Ulrich Zierahn

Especially when interest rates are low, it would be advisable for governments to take on debt in order to fund more R&D.

Dr. Georg Licht, on a ZEW study investigating how economic crises affect state funding for research and development, Wirtschaftswoche (9 February 2018)

An increase in child benefits would not help Hartz IV recipients. And the elimination of day care fees would do little for low-income families, who usually don't pay much anyway.

Dr. Holger Stichnoth and Florian Buhlmann, on the effects of the grand coalition's policies, Süddeutsche Zeitung (13 February 2018)

We can no longer pollute the air free of charge. Of course, congestion charges in cities can also burden individual households. But their consequences are less drastic than banning cars.

Professor Martin Kesternich, on a ZEW analysis studying the advantages and disadvantages of congestion charges compared with those of car bans, Zeit Online (29 March 2018)

... IN DIALOGUE

WITH THE PUBLIC

24 January



Lunch Debate: How Europe Can Deliver

Negotiations for the EU's new financial framework are more difficult than ever. What could a future division of responsibilities in the EU look like? The panellists at this Lunch Debate addressed this question from different perspectives.



Lunch Debate: Reforming the Eurozone

Bodo Lehmann, the director of Baden-Württemberg's representation to the EU, welcomed the audience to the lunchtime event. The panellists discussed the future of the eurozone and the EC proposal to create a European finance minister.



Communication and Fiscal Policy

In his talk, **Dr. Jens Weidmann**, the president of the Deutsche Bundesbank, explained how central banks' more intensive communication can create greater transparency and foster trust among the public that they are fulfilling their mission of keeping prices stable.

16 April



The Race to Catch up with Silicon Valley

Has Germany missed the digital transformation train? This question was addressed by **Dr. Nicole Hoffmeister-**

Kraust (Baden-Württemberg's economic minister), Professor Achim Wambach (ZEW), Andreas von Bechtolsheim (Sun Microsystems), and Dr. Georg Müller (MVV Energie AG).

2 May

January

February

March

April

May

June





CONTACT

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 daniela.heimberger@zew.de

ZEW Lunch Debates in Brussels

This discussion series focuses on the challenges that have faced the EU since 2014. The events take place at the EU representation of Baden-Württemberg in Brussels.



Baden-Württemberg

First-Hand Information on Economic Policy

The event series First-Hand Information on Economic Policy invites leading policy-makers and economists to discuss urgent economic policy issues, new ideas, and innovative solutions to current problems. The series is made possible with funding from the ZEW Sponsors' Association.

17 October

20th Lunch Debate – Anniversary



**20th Lunch Debate:
 Beyond Horizon 2020**

Beyond Horizon 2020 was devoted to the effects of research and innovation in Europe. What are the prospects for future research funding in the EU? Which conditions must be in place to foster innovation?

12 July

Artificial Intelligence – A Wake-up Call for Europe



In view of AI's irrefutable advance, Deutsche Telekom executive **Claudia Nemat** provided insight from business practice regarding the opportunities and risks of AI technology.

4 December

Preparing for Upheaval in the Auto Industry



BMW's chief of engineering **Klaus Fröhlich** described how electric vehicles, driverless cars, and AI technology will influence the auto industry and individual travel from the perspective of a globally active German company.

July

August

September

October

November

December

III

IV

... IN DIALOGUE WITH SCIENCE

Scientific exchange is writ large at ZEW. In 2018, ZEW welcomed numerous prominent researchers at more than 40 events, in Germany and abroad. These include:

25.–26.01.

Conference: Trade Relations After Brexit

With Britain’s exit from the EU looming, trade policy is heading for a reshuffling. Experts from the domains of economics and politics assembled at ZEW to discuss future relations between London and Brussels.

23.–24.04.

The ZEW Public Finance Conference

Sparked by recent developments in Europe, this year’s conference focused on the coordination of national fiscal policies in the EU monetary union.

08.–09.03.

7th Annual MaCCI Conference

ZEW brought together some 120 experts to speak about the influence of competition policy on corporate profits. Among the attendees was the prominent Yale economist Fiona M. Scott Morton.

15.–16.09.

The 2018 Beijing Humboldt Forum

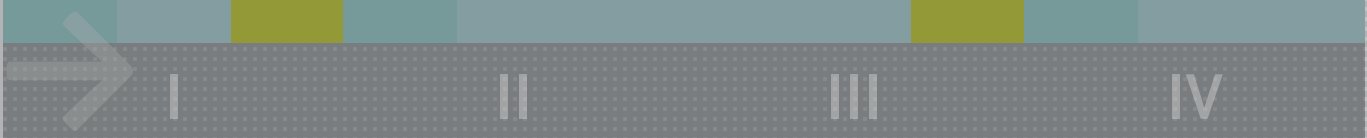
“Green Economy, Cultural Heritage, Education 2035” was the motto of the Beijing Humboldt Forum in 2018. In keeping with the theme, ZEW devoted one session of the event to the role of environment and innovation policy in the economic development of China and the EU.

12.–13.10.

Matching in Practice – A Workshop on Market Design

How can markets without price coordination – such as the allocation of school places or the distribution of organs for transplantation – be made fairer and more efficient? A group of some 30 international researchers presented a variety of theoretical models and practical approaches.

January February March April May June July August September October November December





... GETS

HIGH SCHOOL STUDENTS INTERESTED IN ECONOMICS

The YES! – Young Economic Summit is Germany’s largest student competition for economics. Each year, teams of high school students across Germany vie to come up with the best solutions to today’s global economic challenges.

Experts from leading institutes in Germany help competitors work on their ideas during a six-month mentoring programme in the run-up to the summit. One of those leading institutes is ZEW, which has mentored YES! competitors since 2017 – with great success. The ZEW team placed first in 2017 and again in 2018 despite stiff competition. The 2018 team consisted of a group of students from the Fritz Erler Schule in Pforzheim led by Dr. Holger Stichnoth, the deputy head of the ZEW Research Department of “Social Policy and Redistribution”.

About YES!

YES! is a joint project of the ZBW – Leibniz Information Centre for Economics in Kiel and the Joachim Herz Stiftung in Hamburg, with funding from the German Federal Ministry of Economic Affairs and Energy.



FACTS ON YES! 2018

SCHOOLS

31

HIGH SCHOOL STUDENTS

251

WINNER

1

the team of the Fritz Erler
Schule Pforzheim mentored
by ZEW

INSTITUTES

8

(ZEW, RWI, iwp, GIGA,
IfW, ZBW, DIW, ESMT)



CONTACT

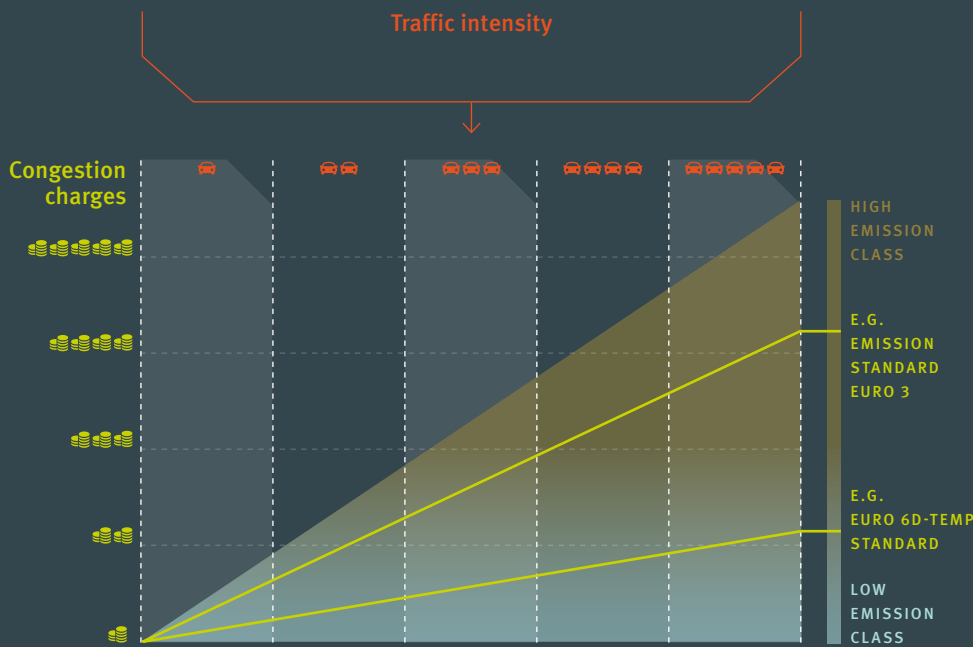
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CLIMATE CHANGE AND ENERGY TRANSITION

WHAT ARE THE RIGHT INCENTIVES FOR TRANSPORT POLICY?

CONGESTION PRICING – BETTER AIR QUALITY AND LESS TRAFFIC ¹

Congestion pricing is an important strategy for managing urban road use. Pegged to local traffic and pollution levels, congestion pricing is preferable to car bans and similar measures because it preserves personal choice while improving the urban environment. Its principle is simple:



NO_x

BETTER AIR QUALITY



CO₂

FEWER GREENHOUSE GAS EMISSIONS



LESS CONGESTION



INCENTIVES TO CHANGE TRAVEL BEHAVIOUR



BUS, TRAINS, BICYCLES BECOME MORE ATTRACTIVE

Sources:

1 | ZEW (2018): Policy Brief "The 'Diesel' Debate: Economic Policy Recommendations (<http://ftp.zew.de/pub/zew-docs/policybrief/en/pb03-18.pdf>)

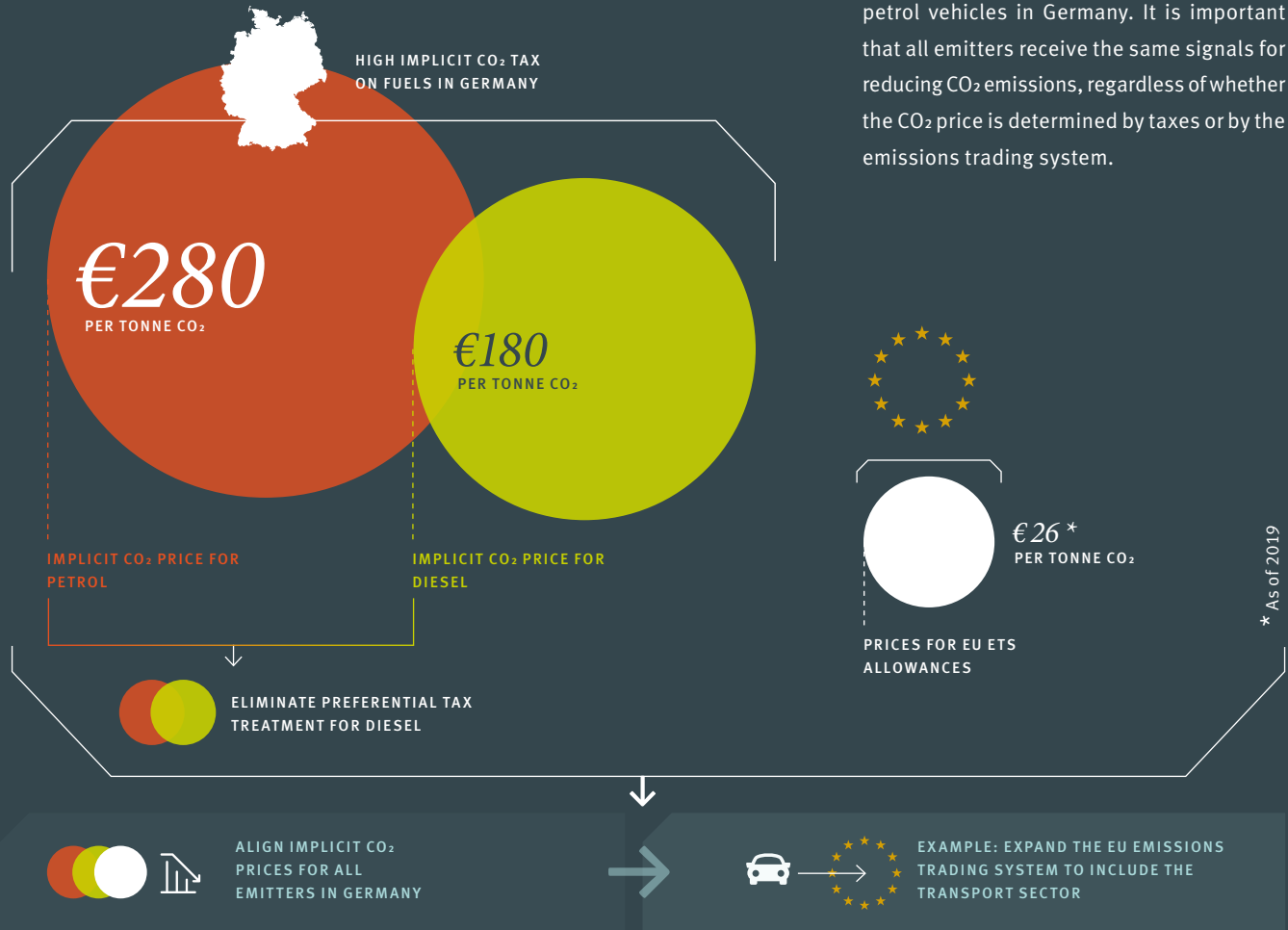
2 | ZEW (2018): "Energy Market Barometer," in ZEWnews (<http://ftp.zew.de/pub/zew-docs/zn/schwerpunkte/energiemarkt/Energiemarkt0218.pdf>)

ZEW research liaisons: Prof. Dr. Martin Kesternich, Dr. Wolfgang Habla



HOW TO REDUCE CO₂ EMISSIONS IN TRANSPORT

In the European Union Emissions Trading System (EU ETS), a tonne of CO₂ costs around €26. The costs are much higher for diesel and petrol vehicles in Germany. It is important that all emitters receive the same signals for reducing CO₂ emissions, regardless of whether the CO₂ price is determined by taxes or by the emissions trading system.



POTENTIAL OBSTACLES TO EXPANDING ELECTRIC VEHICLE USE ²

2017 **66,000** ELECTRIC CARS ON GERMAN ROADS → by 2030 **6,000,000** ELECTRIC CARS ON GERMAN ROADS } GERMAN TARGET

For its Energy Market Barometer, ZEW asked experts the following question: What are the most important obstacles to putting 4.5 million electric cars (roughly 10% of all vehicles) on German roads by 2025?



... OPENS DOORS TO

NEW CAREER OPPORTUNITIES

ZEW offers many opportunities for employees, from professional development and funding for PhD students to valuable experiences that pave the way for a future career in academia, economics, and management.

ZEW carries out cutting-edge research on economic policies and trends. Keeping up with the newest ideas and approaches requires constant exchange with the scientific community. This is why ZEW is always looking for young, outstanding researchers who want to work on demanding projects with a practical purpose.

Doctoral education

ZEW's cooperation with the graduate programmes in business and economics (CDSB/CDSE) at the University of Mannheim gives talented students the opportunity to earn a PhD in the stimulating environments of two leading research institutes. The PhD track consists of two phases: coursework (mandatory and elective) and doctoral research.

Postdocs at ZEW

ZEW prizes the expertise of its postdocs, who are responsible for important research and advising projects. ZEW postdocs are eligible to apply for leading positions at the institute and frequently receive professorships at universities and technical colleges.



WEBSITE

More information on the PhD track:
www.zew.de/WS877-1



CONTACT

Interested in a career at ZEW?
Further information can be found at:
www.zew.de/en/karriere
Doris Brettar, doris.brettar@zew.de

ZEW Visiting Researchers Programme (VRP)

The Visiting Researchers Programme promotes exchange by offering academics in Germany and abroad the opportunity to complete a research stay at ZEW. The promising young economists and established researchers who participate in the programme cooperate closely with ZEW staff, contribute to ongoing projects, and work on their own research. Applications can be submitted at any time. Project proposals must be compatible with the concentrations of ZEW's research units.



CONTACT

Further information is available on the website:

www.zew.de/WS307-1

Dr. Daniela Heimberger,
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REASONS TO WORK AT ZEW ...





// Katharina Pakebusch, Human Resources Officer
in the “General Services” Department

// Martina Hamann, Assistant in the research
departments of “International Finance and
Financial Management” and “Corporate
Taxation and Public Finance”

A portrait of Dr. Theodoros Chatzivasileiadis, a man with dark hair and a beard, wearing a grey sweater. He is smiling slightly and looking towards the camera. The background is a dark blue wall with a light blue horizontal band.

“I am a postdoc in environmental economics. ZEW has given me an amazing opportunity to study the economic effects of climate change.”

// Dr. Theodoros Chatzivasileiadis, Researcher in the “Environmental and Resource Economics, Environmental Management” Department

... CARES ABOUT

CORPORATE SOCIAL RESPONSIBILITY

ZEW cares deeply about what it owes society. As a signee of Baden-Württemberg's WIN Charter, ZEW is officially committed to economic, environmental, and social sustainability. Over the past several years, it has carried out numerous measures in accordance with this mission. In the process, corporate social responsibility has become a permanent part of our institutional philosophy.



**NACHHALTIGES
WIRTSCHAFTEN**

WIN CHARTER

The WIN Charter is an initiative by the federal state of Baden-Württemberg to promote corporate social responsibility among small- and medium-sized companies. To date, it is Germany's only such system for sustainability management. WIN Charter endorses a workable and transparent approach for increasing sustainability in businesses. As part of its commitment to the WIN Charter, ZEW has already taken a number of steps. Some of these are described on the right.



WEBSITE

More information at
www.win-bw.com

YES! YOUNG ECONOMIC SUMMIT

2018 WIN Project: Youth Development

The YES! – Young Economic Summit aims to foster a sense of social responsibility among high school students. ZEW mentors participants as they work to find solutions to global economic challenges (see p. 105).



The Value of Social Responsibility

ZEW is convinced that corporate social responsibility has social value. That is why it campaigns for social inclusion and the sustainable use of IT devices by working together with the green non-profit IT company Arbeit für Menschen mit Behinderung, who offers exciting jobs for people with and without disabilities.



Yoga courses at ZEW

Since 2018, our offices have been powered entirely by **green electricity**.



At ZEW, it is a top priority that women receive the same opportunities as men. Our efforts have yielded results. In 2018 ZEW received the **TOTAL E-QUALITY** award for the second time. This award recognises businesses and institutions that foster equal opportunity, diversity, and a healthy work-life balance.

... PROMOTES

PROFESSIONAL DEVELOPMENT

ZEW is the only economic research institute in Germany with a department devoted entirely to professional development – part of our deep commitment to knowledge sharing. The close connection between economic research and applied economics at ZEW ensures professional development that is both rigorous and practical.

OPPORTUNITIES FOR PROFESSIONAL DEVELOPMENT AT ZEW

Expert Seminars

... concentrate primarily on statistical and econometric methods along with general topics in economics. Other seminars provide soft skills tailored to specific professions.

Inhouse Seminars

... are designed specifically for business and institutional clients. In close cooperation with them, the ZEW professional development team develops custom-tailored courses in German or English.

International Qualification Programmes

... held in English for diverse target groups. These include workshops, training sessions, summer schools, and custom programmes in Germany and abroad.

// “Fit for Partnership with Germany”

In 2018, over 20 business executives from various economic sectors in Vietnam took part in ZEW’s four-week-long manager training programme Fit for Partnership with Germany. During their stay, the participants forged new ties and gained first-hand insight into German business culture. The programme was made possible by the Federal Ministry of Economic Affairs and Energy and the Gesellschaft für Internationale Zusammenarbeit (GIZ).



DOWNLOAD

Further information can be found in the latest seminar programme:
www.zew.de/WS59-1

or contact:

Barbara Hey
Phone +49 621 1235-244
barbara.hey@zew.de

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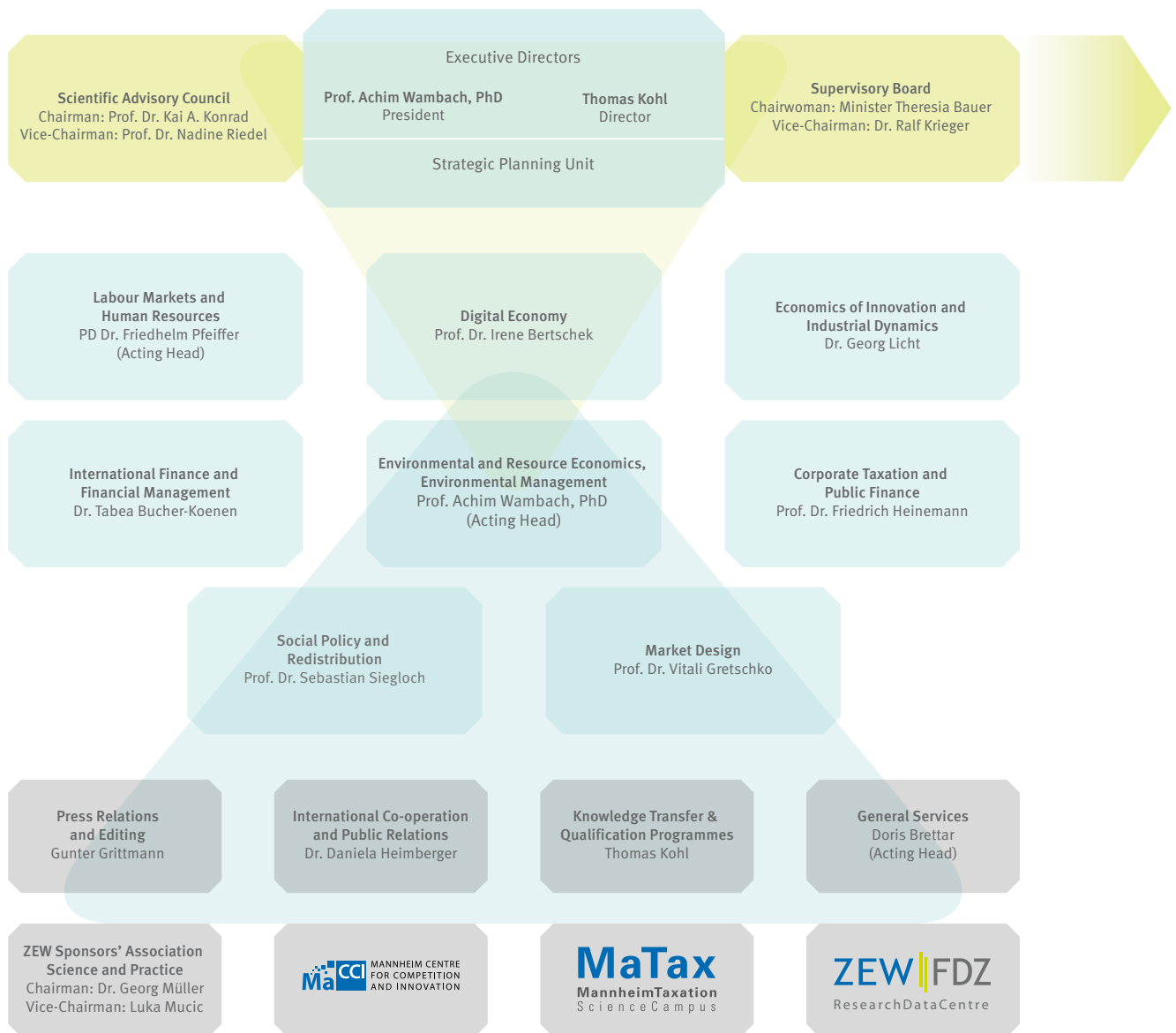


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Wirtschaftsforschung GmbH Mannheim
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PRINT //

Karl Elser Druck GmbH, Mühlacker

ZEW ANNUAL REPORT 2018
ISSN 1434-4424

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