

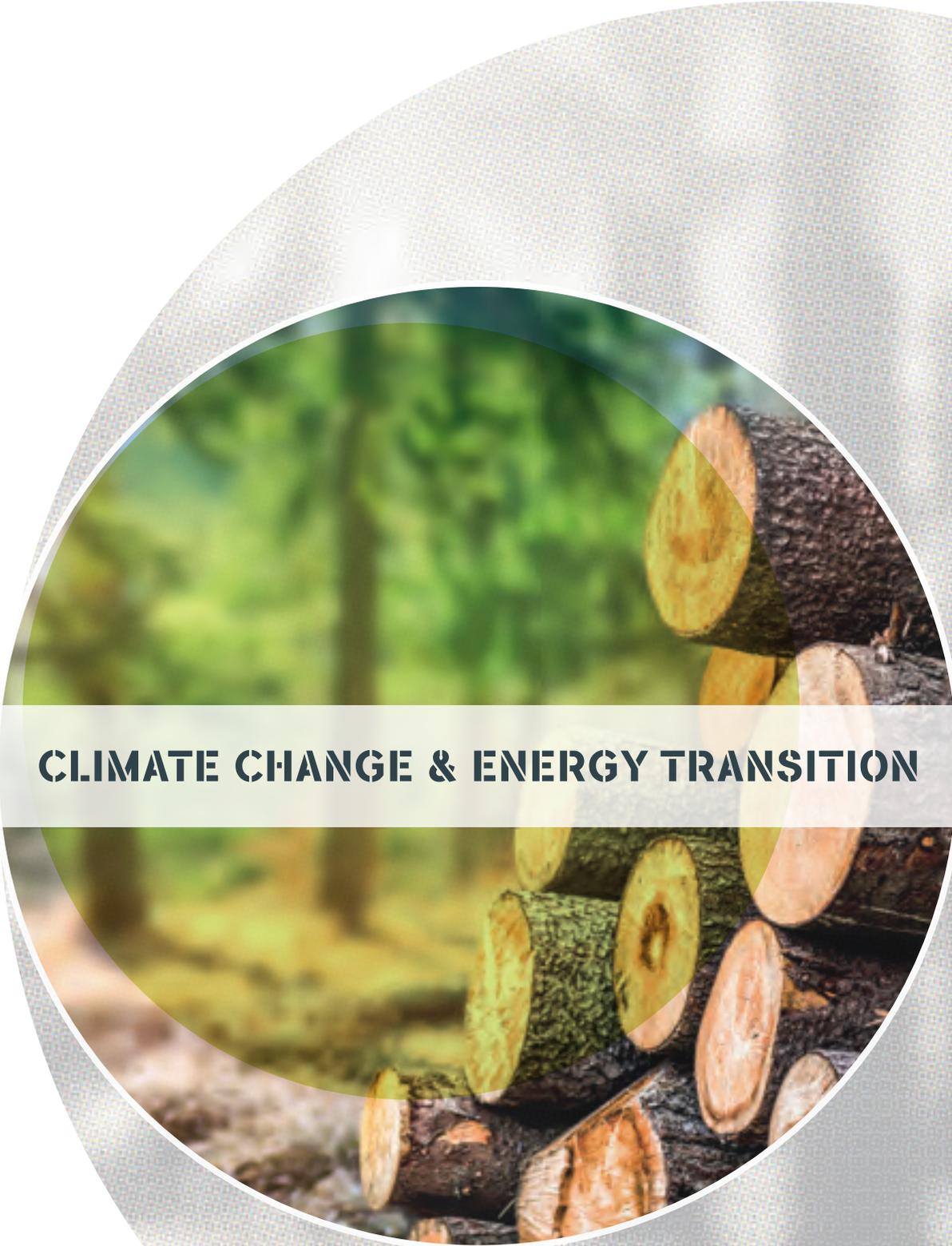
ZEW

**CLIMATE CHANGE &
ENERGY TRANSITION**

IN FOCUS

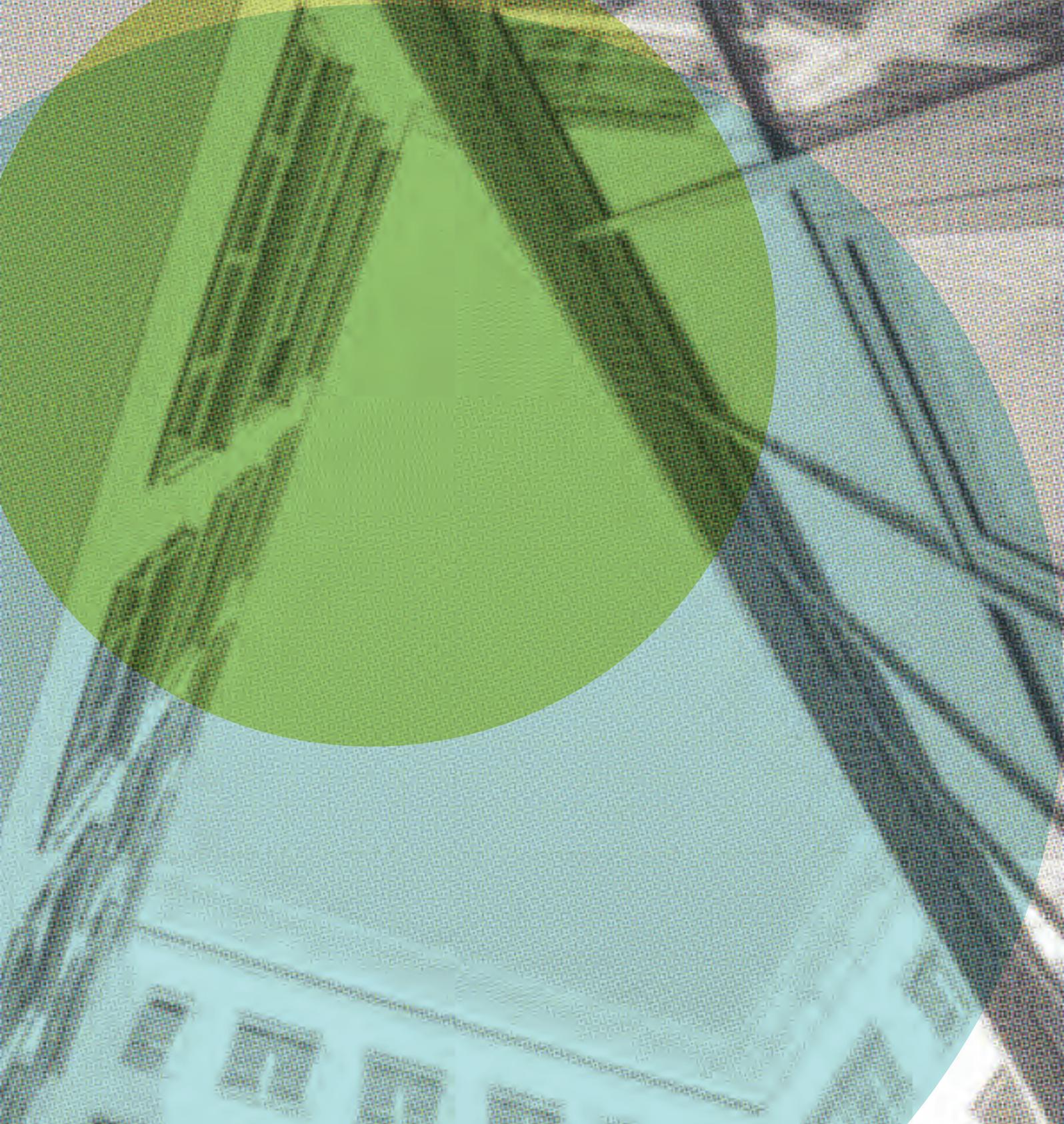
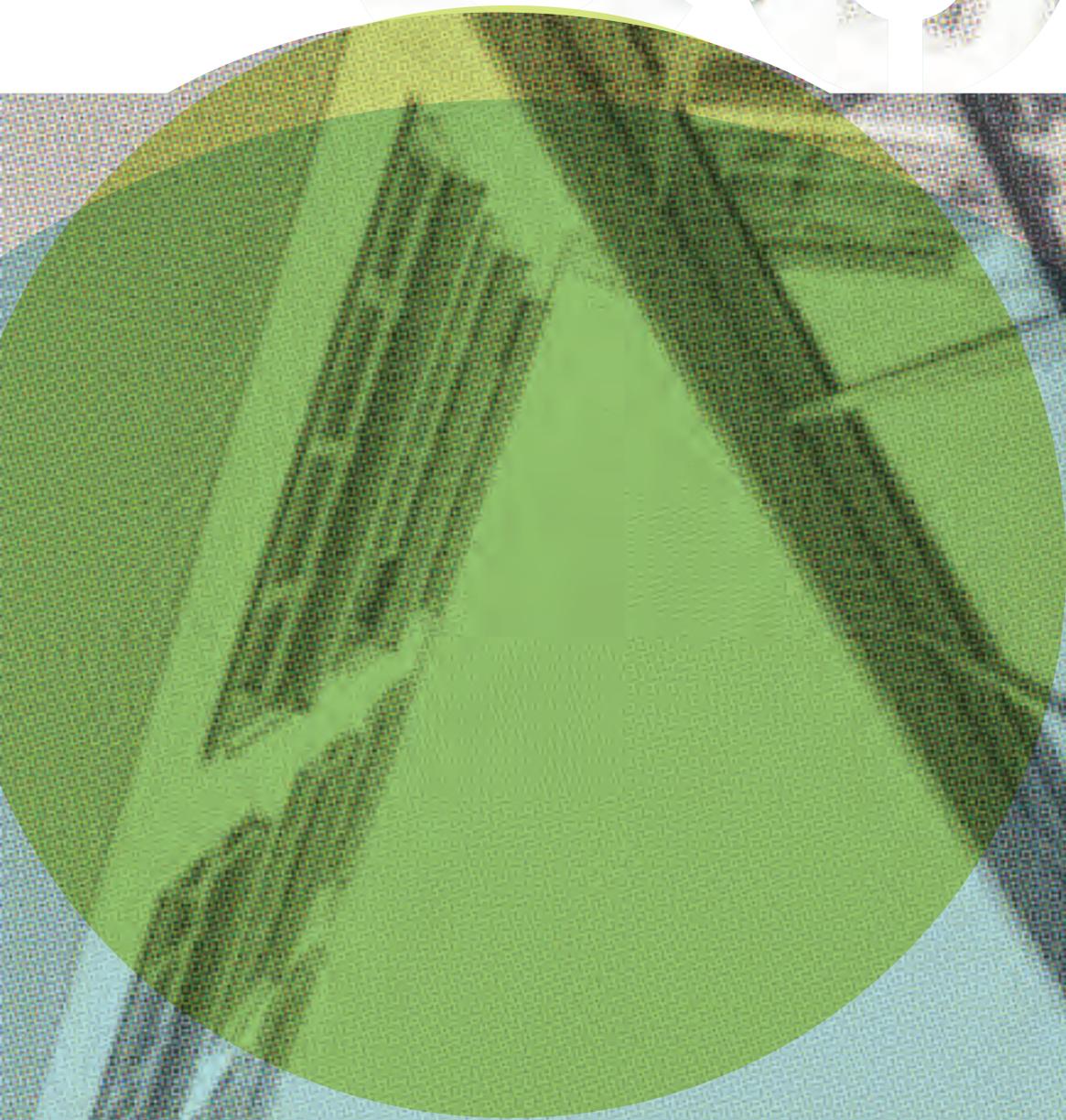
ANNUAL REPORT 2021

Leibniz
Leibniz
Association



CLIMATE CHANGE & ENERGY TRANSITION

CONNA





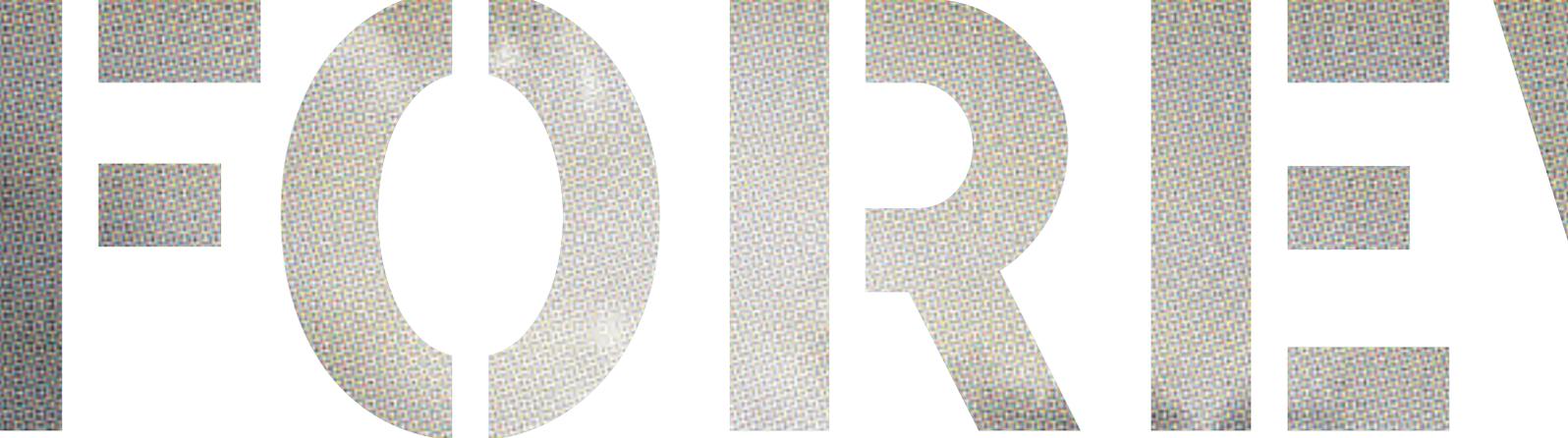
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DEAR
READERS,

No sooner than Germany had relaxed pandemic restrictions, the country was back in crisis mode with Russia's invasion of Ukraine. While the war in Ukraine has rightfully been absorbing the attention of policymakers, the government must not neglect its long-term responsibilities. In this time of uncertainty, our evidence-based research is more important than ever before, not only as a source of guidance for economic policy, but also as a source of information for the broader public. In line with this insight, ZEW published ten economic policy recommendations at the end of 2021 as a new federal government was formed under the leadership of Olaf Scholz. In the run-up to the election, ZEW's study on the fiscal effects of party programmes was actively taken up by the media, stimulating lively public debate.

This annual report provides an overview of our activities during the past year. Climate change was a topic of major concern in 2021, not least due to its recent impacts. The devastating floods that struck Europe in 2021 once again highlighted the urgent need to curb global warming. A major focus of ZEW research is climate change mitigation and the green energy transition. We use economic methods to analyse the emergence of environmental problems, to evaluate climate and energy policy measures, and to provide recommendations to policymakers. A dedicated section of this report describes our work in the domain of climate and energy policy.

The past year was a special one for us: ZEW celebrated its 30th anniversary in 2021, and can now look back on three remarkable decades. Over the years, ZEW has distinguished itself as one of the leading economic research institutes in Germany and Europe. A festive evening event was held in 2021 to commemorate this jubilee year.

Our research programme and strategy also underwent further development at the start of 2021 with the founding of the new Research Group "Health Care Markets and Health Policy". The group aims to improve our understanding of the regulatory and market conditions that enable good health care while also strengthening empirical health economics research in Germany. Also in 2021, ZEW launched the Mannheim Institute for Financial Education (MIFE), a competence centre for basic research devoted to the financial education of all population groups. MIFE was initiated by Professor Tabea Bucher-Koenen, a ZEW department head, and is a joint undertaking with the University of Mannheim. Also noteworthy was the appointment of Professor Kathrine von Graevenitz to the position of Leibniz Professor at the University of Mannheim, which has strengthened ZEW's empirical research in environmental economics while also intensifying its academic dialogue with the university.

In 2021, ZEW once again served as a platform for enriching exchange. Amongst many esteemed guests, ZEW welcomed the President of the Federal Constitutional Court, Professor Stephan Harbarth; the President of the German Ethics Council, Professor Alina Buyx; the Chairman of the Board of BASF, Dr. Martin Brudermüller; and the President of the Berlin Social Science Center, Professor Jutta Allmendinger.

WORLD

FOREWORD

WE HOPE YOU ENJOY READING
OUR ANNUAL REPORT!



PROF. ACHIM WAMBACH, PHD
PRESIDENT



THOMAS KOHL
MANAGING
DIRECTOR

ANALBOU

MISSION

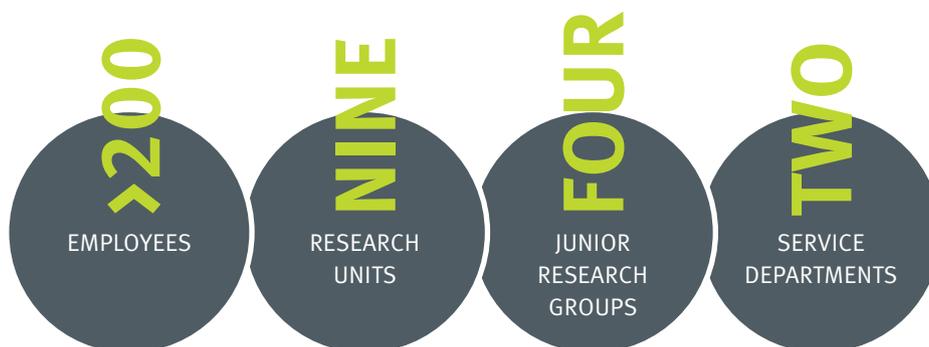
ZEW PURSUES TWO CENTRAL GOALS WITH ITS WORK:

- ✘ politically relevant research
- ✘ evidence-based policy advice

As an independent, non-profit institute, ZEW conducts evidence-based economic policy research on a range of high-visibility topics, including the current war in Ukraine, the COVID-19 crisis, digitalisation, European integration, as well as 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.

ZEW IN BRIEF

The Mannheim-based ZEW – Leibniz Centre for European Economic Research is a leading German economic policy institute with a strong Europe-wide reputation, and a member of the Leibniz Association. Its applied empirical 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 carry out major economic policy advising projects. Under the leadership of Professor Achim Wambach, the president of the institute, and Thomas Kohl, the institute's managing director, ZEW currently employs some 200 people spread out across nine research units, four junior research groups, and two service departments.



ZEW SCIENTIFIC OUTPUT

2021 IN NUMBERS



193

RESEARCH PROJECTS

81



ARTICLES ACCEPTED
IN PEER-REVIEWED
JOURNALS

53



CONFERENCES/
WORKSHOPS HELD

240



REFeree REPORTS

61



TEACHING ACTIVITIES

15



PRIZES/
AWARDS

458



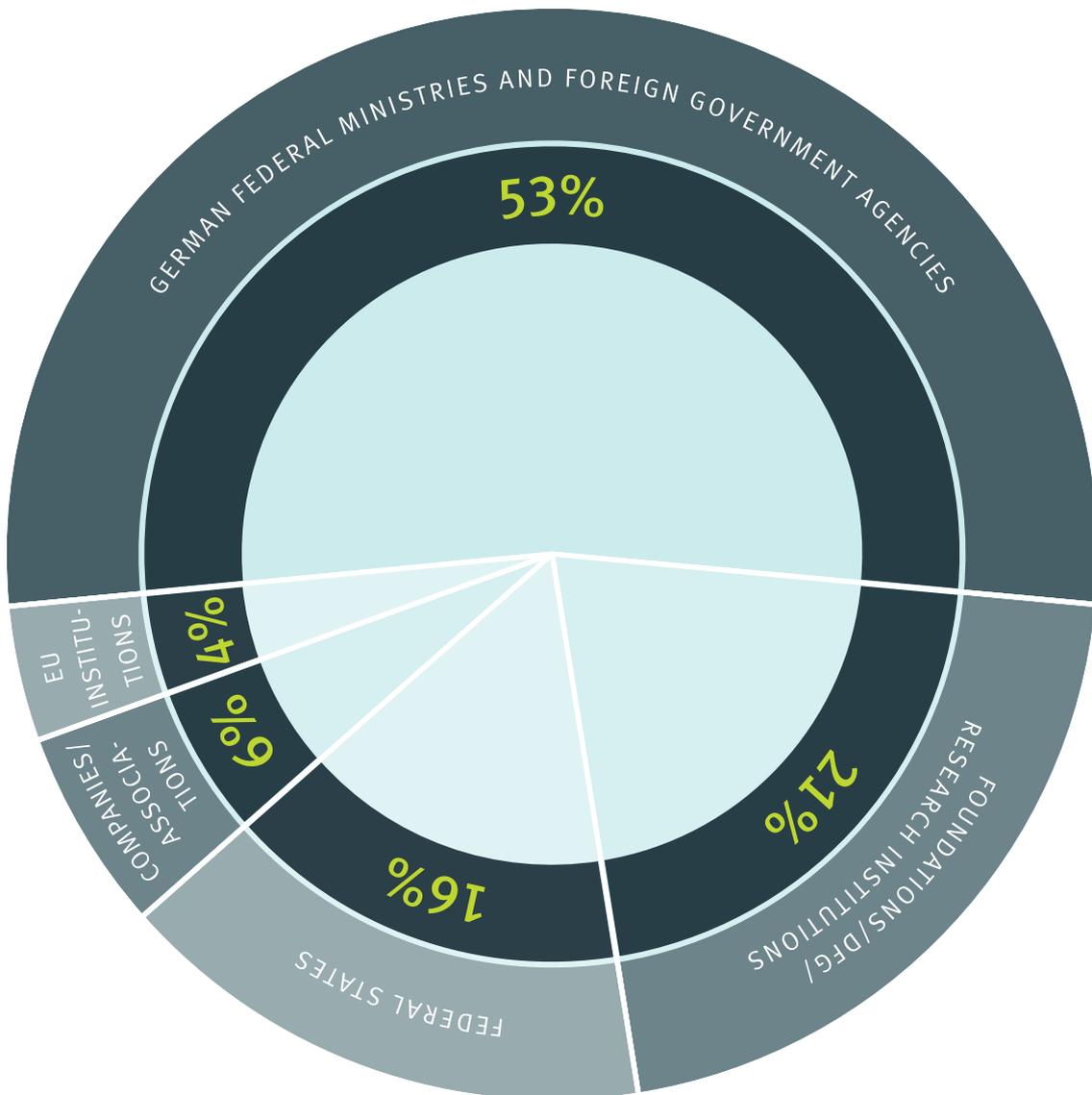
PRESENTATIONS AT CONFERENCES

BIERS

ABOUT US

SOURCES OF

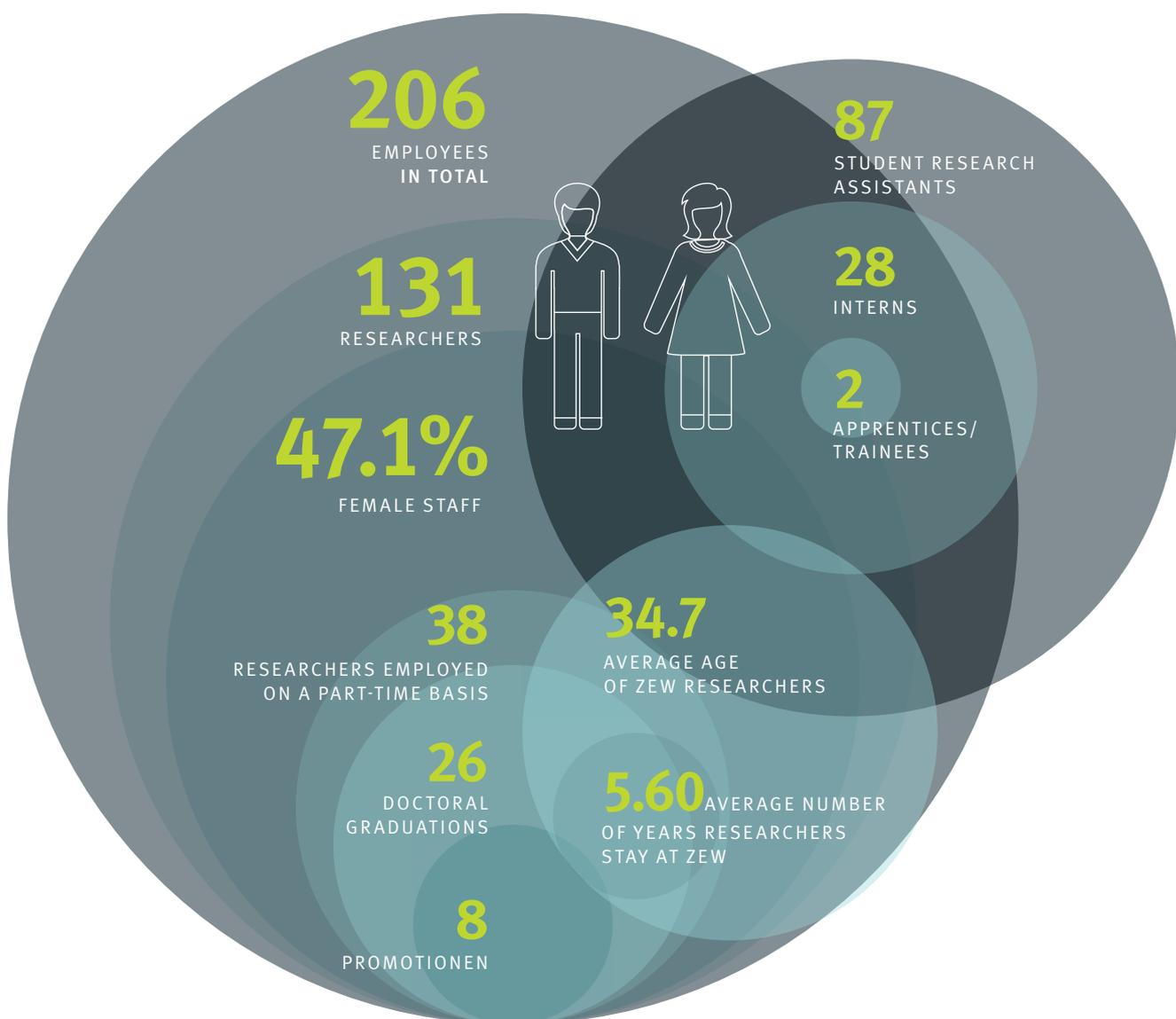
THIRD-PARTY FUNDING 2021



BALANCE

STAFF REPORT (AS OF DECEMBER 2021)

PERSONNEL AND FINANCES



ZEW PROFIT AND LOSS STATEMENT

	2020	2021*
Institutional funds	11,886	12,073
Joint Initiative for Research and Innovation Funding	340	349
Third-party funds (turnover, inventory changes, subsidies)	7,535	7,896
Other business revenues	150	174
Other interest and similar revenues	8	11
Income from the reversal of the special item for contributions to fixed assets	578	645
TOTAL REVENUES	20,497	21,148
Staff expenditures	14,204	14,799
Third-party services	1,562	1,339
Other operating expenditures	4,640	4,310
Asset write-offs	561	631
Allocation to special items for contributions to fixed assets	476	411
Other interest and similar expenditures	36	31
Financial result	1	1
TOTAL EXPENSES	21,480	21,522
PROFIT/LOSS FOR THE FINANCIAL YEAR	-983	-374
Withdrawals from appropriated reserves	1,118	561
NET INCOME	135	187

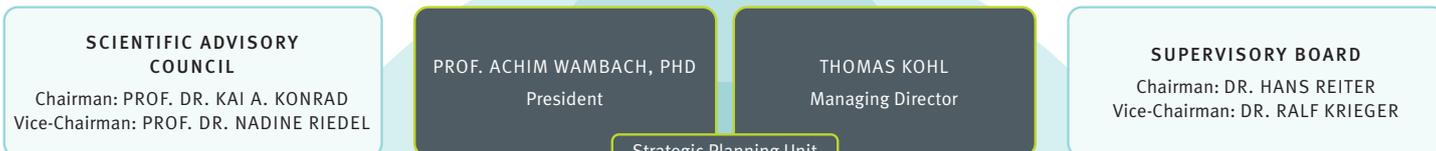
ZEW BALANCE SHEET AS OF 31 DECEMBER 2021*

ASSETS	2020	2021*	LIABILITIES AND EQUITY	2020	2021*
Intangible assets	172	373	Share capital	26	26
Downpayments made	27	0	Appropriated reserves	3,620	3,194
Real estate and construction in process	7,952	7,724	Other reserves	2,169	2,169
Equipment	766	598	Net income	135	187
Fixed assets	8,917	8,695	Shareholder's equity	5,950	5,576
Stocks	3,385	4,691	Untaxed reserves	3,361	3,779
Receivables/other assets	950	1,141	Reserves	2,477	2,481
Cash at banks	7,519	6,449	Advances received	3,469	4,967
Current assets	11,854	12,281	Liabilities to banks	3,390	2,751
Prepaid expenses	275	401	Other liabilities	2,399	1,823
			Outside capital	11,735	12,022
TOTAL	21,046	21,377	TOTAL	21,046	21,377

As of April 2022, * preliminary figures in K euros

ORGANISATION CHART

EXECUTIVE DIRECTORS



Strategic Planning Unit

RESEARCH UNITS



SERVICE UNITS



AS OF JUNE 2022

COMMITTEES

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Ministry of Science, Research and the Arts
Baden-Württemberg

Vice-chair

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Freudenberg SE

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Ministry of Finance of Baden-Württemberg

STEPHAN ERTNER
Ministry of Finance of Baden-Württemberg

MICHAEL KLEINER
Ministry of Economic Affairs, Labour and Tourism
Baden-Württemberg

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Cellzome GmbH

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University of Mannheim

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Federal Ministry for Economic Affairs and
Climate Action

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MdL Baden-Württemberg

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Max Planck Institute for Tax Law and Public Finance,
Munich

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Munich

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European School of Management and Technology
(ESMT) Berlin

PROF. DR. BETTINA ROCKENBACH
University of Cologne

PROF. DR. ISABEL SCHNABEL
University of Bonn

PROF. DR. MONIKA SCHNITZER
Ludwig Maximilian University of Munich

MOBI

GREEN MOBILITY

CYCLING FOR THE CLIMATE

“I think it’s great that ZEW cares so much about employee mobility. A core element of ZEW’s institutional DNA is cycling, both in terms of the number of its personnel who commute by bike and the group rides it organises for employees. Moreover, a ZEW team regularly takes part in the City Cycling challenges sponsored by Mannheim in cooperation with the state of Baden-Württemberg. Because the institute has its own shower facilities, none of us has to worry about getting sweaty in the summer or about cycling longer distances. The bike parking in ZEW’s underground garage offers weather and theft protection and can also accommodate non-standard bikes such as those with child trailers. And when the weather is very bad, ZEW’s convenient location makes using public transportation – and staying car-free – easy.”



NACHHALTIGES WIRTSCHAFTEN At ZEW, sustainability is a priority. By signing the WIN Charter initiative of the state of Baden-Württemberg, ZEW has officially committed itself to economic, ecological and social responsibility. In past years, ZEW has introduced a host of measures in pursuit of these goals, from switching to green electricity and the sustainable use of computers to the promotion of environmentally friendly transport such as regular participation in the City Cycling challenge, a Germany-wide campaign to encourage the use of bicycles. Sustainability is now a permanent part of our institute’s mantra.

For more information on the WIN Charter, see: www.win-bw.de



DOMINIC EGGER
Press officer,
Press Relations and Editing

PROF. DR. MARTIN KESTERNICH
Deputy head,
Environmental and
Climate Economics

MAXIMILIAN BACH
Researcher,
Labour Markets and Social Insurance
(left to right)



SELIN IZGEC
Event management staff,
International Cooperation
and Public Relations

DR. DANIELA HEIMBERGER
Head, International Cooperation
and Public Relations

NICOLE EHRHARDT
Event management staff,
International Cooperation and Public Relations

(left to right)

ZEW EVENTS ON CLIMATE AND ENERGY

FOOD FOR THOUGHT

“Science communication and the dissemination of knowledge are part of our core mission. To those ends, open events are crucial – both for sharing ZEW findings with experts and the public at large and for stimulating debate. In 2021 climate and energy were a key area of focus at ZEW. Across a variety of events and prominent speakers we examined the conditions necessary for the success of the clean-energy transition.

When the COVID-19 pandemic broke out, ZEW used the crisis to implement a number of important changes. For instance, we launched online events such as #ZEWBookTalks and #ZEWlive, which reached audiences on their screens at home and eliminated travel for international guests, cutting climate emissions. The initial response was so positive that we decided to continue the online events after the pandemic ends.

Sustainability also figures prominently in our logistics. Each year, ZEW holds around 50 conferences, and participants rack up many air miles and road hours to attend them – and go through quite a bit of food, besides. That’s why our meals and snacks are regionally and seasonally sourced, feature many vegetarian and vegan options, and are calculated to minimise waste. We also encourage our guests to travel by train whenever possible.”

ZEW EVENTS IN 2021 ON CLIMATE AND ENERGY

- | | |
|------------------|---|
| 09 February 2021 | <p>BASF DURING THE CLEAN-ENERGY TRANSITION
First-Hand Information on Economy Policy, with BASF chair Dr. Martin Brudermüller</p> |
| 08 October 2021 | <p>MOBILE BADEN-WÜRTTEMBERG
Congress including Elke Zimmer (State Secretary at BW Transport Ministry), Christoph Dahl (the director of the Baden-Württemberg Stiftung) and Dr. Peter Kurz (the mayor of the city of Mannheim)</p> |
| 25 October 2021 | <p>RESOLUTION ON THE CLIMATE CHANGE ACT
First-Hand Information on Economy Policy, with President of the German Constitutional Court Prof. Dr. Stephan Harbarth</p> |

www.zew.de/AM7582-1

www.zew.de/VA3639-1

www.zew.de/AM7970-1

TRAINING

DISSEMINATING KNOWLEDGE

CLIMATE POLICY, UP CLOSE

“We at ZEW work to produce research that meets the highest academic standards, but we also care about highlighting its connection with everyday life. This approach resonates with the general public and has been a perfect starting point for my work on audience-appropriate knowledge sharing; we meet people 'where they are' as we help them to understand our work. For instance, in the "Environmental and Climate Economics" Department, we developed a climate policy stimulation game for school groups. Students played the role of policymakers and used scientific findings to make decisions about climate policy strategy and action. The participants were very enthusiastic about the game. Presented with easy-to-understand results from research studies, they were able to shed light on complex, societal issues.”



KLIMAKABINETT: THE CLIMATE POLICY SIMULATION GAME

ZEW, together with Klimastiftung für Bürger in Sinsheim, developed a simulation game in which school groups experience climate policy decision-making first-hand. On 28 September 2021, the game was officially introduced to the public at KLIMA ARENA, a climate theme park in Sinsheim.

For
more infor-
mation, see:
[www.zew.de/
AM7915-1](http://www.zew.de/AM7915-1)



DR. MARC FRICK
Academic assistant to department head, Environmental and Climate Economics

STUD



BETTINA CHLOND
Researcher,
Environmental and
Climate Economics

JANNA AXENBECK
Researcher,
Digital Economy
(left to right)

SUSTAINABILITY GROUP

SHOWING INITIATIVE

“The Sustainable ZEW initiative is meant to support environmentally and socially friendly practices at ZEW and promote evidence-based discussions on related topics. The initiative team, made up of around 15 active members, has pursued a number of projects. For instance, in 2021, we launched QUEST, a new digital seminar series in which researchers present work on sustainability-related questions from various research areas in economics and discuss them together with audiences. An online seminar on “Sustainable Finance” held in September 2021 was particularly successful. We have also carried out surveys and scenario analyses in helping plan a charging station for electric vehicles and are developing a tool that enables the calculation of CO₂ emissions of business trips and introducing appropriate abatement measures. We are proud of the projects we’ve started and enjoy working for sustainability at ZEW.”

SUSTAINABILITY GROUP

Founded: 2019

Active members: around 15

Projects: creating a climate-conscious environment at ZEW (infrastructure, food, waste removal, business travel) and disseminating information on topics in sustainability (QUEST seminars, public podium discussions on sustainable finance, etc.)

QUEST
Seminar:
[www.zew.de/
WS126-1](http://www.zew.de/WS126-1)

Sustainable
Finance:
[www.zew.de/
AM7952-1](http://www.zew.de/AM7952-1)



CLIMATE CHANGE AND ENERGY TRANSITION

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CONTRIBUTING TO TOMORROW'S CLIMATE POLICY

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EUROPEAN CLIMATE POLICY

29 European Green Deal

30 Climate Protection Costs

32 Climate Club | Energy Savings

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WHAT TO DO ABOUT CLIMATE CHANGE?

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CLIMATE IMPACTS FOR GERMANY

37 Driver of Carbon Dioxide Emissions

38 E-Mobility | Eco-Innovations

40 Design of Electricity Markets | Energy Consumption

42 Local Climate Protection | Flood Protection Measures

BO



Interview with
Prof. Dr. Sebastian Rausch (*left*),
Prof. Dr. Martin Kesternich (*right*)
and Prof. Kathrine von Graevenitz, PhD
(*not in the photo*).

CONTRIBUTING TO TOMORROW'S CLIMATE POLICY WITH EVIDENCE-BASED RESEARCH



INTERVIEW WITH PROF. DR. SEBASTIAN RAUSCH, PROF. DR. MARTIN KESTERNICH AND PROF. KATHRINE VON GRAEVENITZ, PHD

The Research Department “Environmental and Climate Economics” has been headed by Professor Sebastian Rausch since August 2020. Together with his team, he uses economic methods to analyse the origins of environmental problems and evaluate the effectiveness of political solutions. In this interview, he and his deputies Professor Martin Kesternich and Professor Kathrine von Graevenitz explain the focus of their research and the challenges confronting German climate policy.

Professor Rausch, questions surrounding energy and climate policy are a major focus of the political arena. Effective political measures are being sought – both nationally and internationally – to make our economic systems climate-neutral as quickly as possible. How does your research department address this issue?

Climate change presents the world community with enormous challenges: Without a global energy transition, we will not be able to avert global warming. To be sure, the burning of fossil fuels for energy production is the most important driver of climate change. We must change our production systems and behavioural patterns so that anthropogenic greenhouse gas emissions are sharply reduced, with emission levels falling to zero over the long term. How this can be achieved is a complex question, however. Accordingly, in our search for answers, we combine different approaches. We examine individual and collective behaviour as it relates to climate change, considering the role that markets and institutions can play in solving the problem. Specifically, we analyse climate and energy policy measures with a view to their economic impact. The aim of our work is to develop practical economic policy measures that address climate change in an ecologically effective, economically efficient and socially balanced way.



CONTRIBUTING TO TOMORROW'S CLIMATE POLICY ...

Professor von Graevenitz, you lead a team that empirically analyses how environmental policy measures affect firms and households. Since 2021, you have also been researching this subject as a professor at the University of Mannheim. What facets of this issue are you investigating with your team?

In order to achieve the ambitious climate policy goals, we need to understand how climate policy instruments actually work. The development of efficient policy approaches necessitates the gathering of empirical evidence on the effectiveness of individual instruments as well as potential interactions between them. We consider various questions. For example: Which measures actually reduce emissions and environmental impacts? To what extent do measures endanger the competitiveness of regulated companies or the German economy? My work focuses on the ex-post evaluation of policy measures, with the aim of making clear policy recommendations. To this end, we draw on detailed data sets. I am very pleased to be advancing this research perspective as part of close institutional cooperation between ZEW and the University of Mannheim, thanks to my appointment as professor.



PROF. KATHRINE VON GRAEVENITZ, PHD



PROF. DR. MARTIN KESTERNICH

Professor Kesternich, you head up research devoted to cooperative behaviour and sustainability – that is, you examine the behaviour of individuals against the backdrop of sustainability and climate change issues. What insights are provided by this line of research?

We draw on methods from behavioural economics to better understand how individuals make decisions and, by extension, how these decisions influence the effectiveness of climate and energy policy. This is of elementary importance for the design of institutions and political measures that regulate the handling of common goods, especially with a view to the long-term approval of the populace for the clean energy transition and climate protection. For example, we are interested in how cooperative solutions can be implemented, the conditions under which climate-friendly choices are made, and circumstances that make it difficult for people to change their habitual behaviour patterns. Against the background of rising energy prices, for example, we are currently analysing how to increase energy efficiency amongst low-income households. Our results underscore the importance of financial incentives. However,

... WITH EVIDENCE-BASED RESEARCH

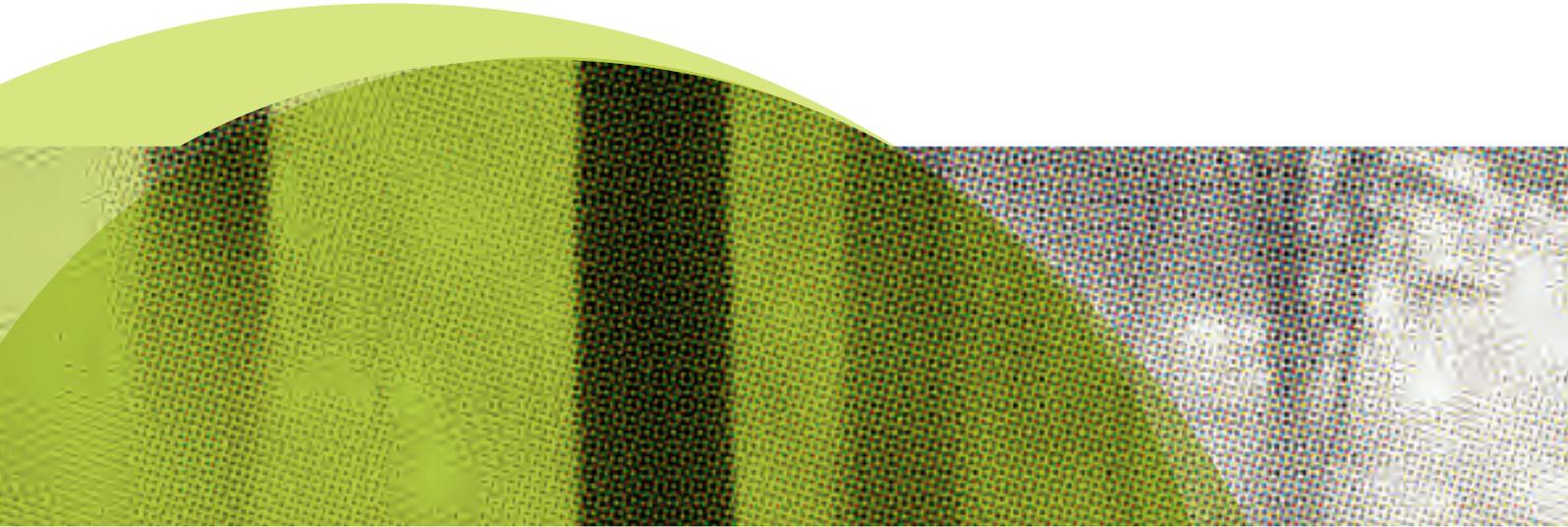
they also show the importance of designing policies based on the insights of behavioural economics. Understanding the nexus between policy measures and behavioural patterns is crucial for ensuring public support for ambitious climate policy over the long term.

Professor Rausch, your research department contributed to the public debate in 2021 with numerous studies and insights. Among other things, you examined the interrelationships between German and European climate policy. What are the challenges confronting German climate policy?



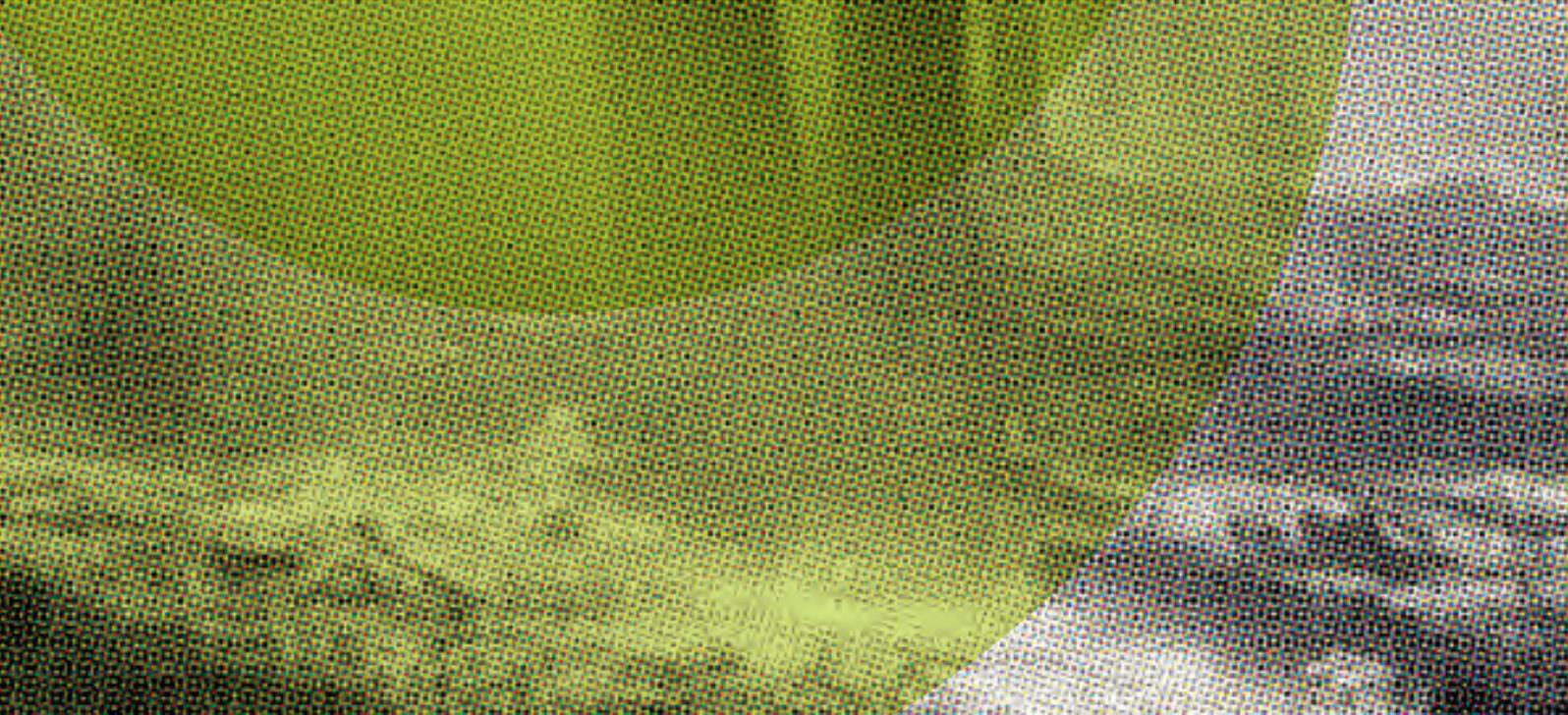
PROF. DR. SEBASTIAN RAUSCH

Ensuring coherence between German and European policy action is a crucial concern. For example, from an economic perspective, how should we expand the German and European emissions trading systems? Furthermore, how should emissions trading be coordinated with other national measures, including climate and energy policies governing transport, the buildings sector and heat provision? Another major challenge is to enable ambitious yet socially equitable climate policy. In this connection, one issue is to consider distributional effects between societal groups, economic sectors and European countries. It is increasingly clear that the decarbonisation of the European economy can only succeed if electricity from renewables becomes the primary energy source across all energy systems. The sustainable energy systems of the future will be based on technologies such as electric vehicles and heat pumps, on green synthetic fuels, and the comprehensive integration of the power, heating and transport sectors. Climate policy that aims to make this vision a reality must avail itself of evidence-based research, such as that conducted by our department. It is important to consider different stakeholder perspectives, to combine ex-post and ex-ante analyses, and to develop an integrated and holistic understanding of environmental and climate problems.



EUROPEAN CLIMATE POLICY

Climate change knows no borders. Therefore, it cannot be solved at the national level alone. Climate and energy policy will take on an even more central role in the European Union in the coming years than it has in the past, especially with regard to the pace of reducing greenhouse gas emissions. The hitherto mixed responsibility of the EU and its Member States must increasingly shift towards joint action in the future.



EUROPEAN GREEN DEAL

CLIMATE POLICY: EMBRACING EUROPE

OPINION PIECE BY PROFESSOR ACHIM WAMBACH IN THE TAGESSPIEGEL

The new German government's coalition agreement concluded in November 2021 put climate policy at the top of the agenda. However, what this transformation will essentially look like is being negotiated in Brussels as part of the "Fit for 55" programme and not in Berlin. The measures agreed in Brussels will have a direct impact on German climate policy.

In 2019, Ursula von der Leyen announced the European Green Deal, and in 2021 the European Commission presented the comprehensive "Fit for 55" package. An essential element for success is the creation of a second emissions trading system for the transport and buildings sectors. Together with the planned expansion of the existing emissions certificate trading for energy and industry, about 80 per cent of the emissions in Europe would then be subject to carbon pricing. This requires a joint European effort. According to a ZEW simulation, the price in the transport and buildings sectors could rise to over 300 euros if the reductions are distributed as planned. A more efficient distribution of the reductions among the sectors, namely more reductions in energy and industry and less in the "more expensive" sector of transport and heat, would distribute costs more evenly and lead to total cost savings of up to one per cent of GDP annually. The question of how many emissions should be reduced in which sectors, and even more fundamentally whether there will be a second emissions trading system at all, is being negotiated at the European level. It is to be welcomed that the coalition parties support the creation of a separate European emissions trading system in their agreement. If the European climate measures are successfully implemented, the hierarchy of political decision-making will shift: Europe will then be responsible for achieving the European climate targets. Germany must ensure that achieving the emissions target is also socially and technically feasible. Measures accompanying the transformation, above all, the expansion of energy infrastructures and the charging infrastructure, will be in focus. The faster grid expansion stipulated in the coalition agreement, the goal of establishing one million public charging stations by 2030 and the acceleration of planning and approval procedures for renewable energies are essential for this.

A longer version of this piece initially appeared on 29 November 2021 in the "Tagesspiegel Background"

CLIMATE PROTECTION COSTS

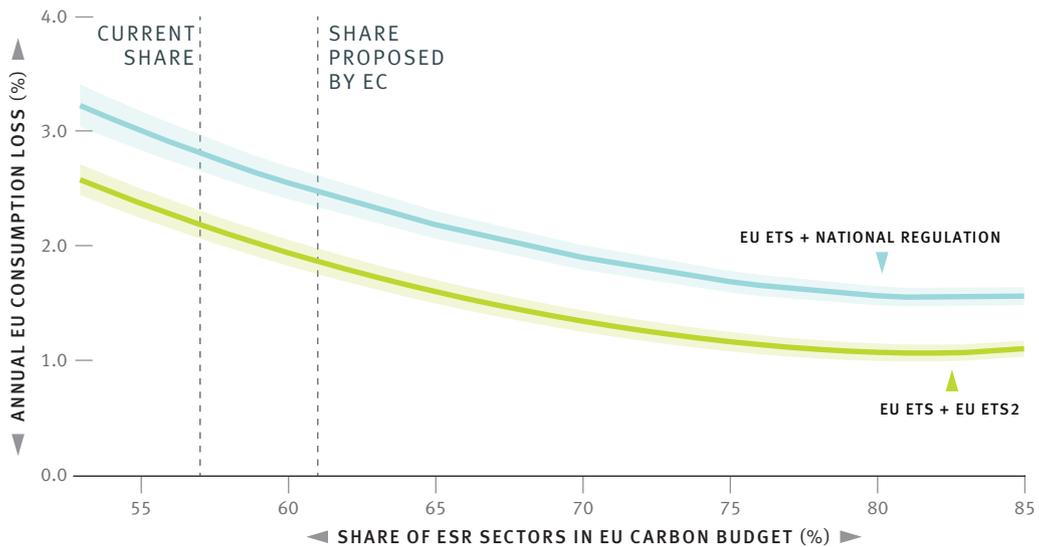
ZEW POLICY BRIEF BY PROFESSOR SEBASTIAN RAUSCH AND DR. JAN ABRELL

Policy Brief:
www.zew.de/PU82677

The reform of the European Emissions Trading Scheme (EU ETS) proposed by the EU Commission will reduce the cost of climate protection in 2030 from 2.8 per cent of EU-wide consumption to 1.9 per cent. The proposal, however, does not exploit the full savings potential of 1.1 per cent. A smart distribution of the CO₂ budget could save the EU up to 152 billion euros in economic costs. The Commissions' proposal, on the other hand, reduces climate protection costs by only 81 billion euros, mainly by introducing a second emissions trading system. With its "Fit for 55" package, the EU Commission proposes to reform the European CO₂

Economic Costs for EU-27 to achieve the 55 per cent climate target

The EU could reduce climate protection costs even further by distributing its CO₂ budget wisely.



Economic costs refer to the projected change in EU-27 annual consumption in 2030. Costs exclude the benefits from avoided climate change. Shaded areas denote standard deviations and solid lines the expected values.

Source: ZEW

“The introduction of a second emissions trading system is an important step in the right direction, because it integrates sectors such as road transport and buildings into emissions trading that have not been covered so far.”

markets. Under the reform, the existing EU ETS, which covers the energy sector and energy-intensive industries, is to be supplemented by a second emissions trading system. And how should the EU CO₂ budget be distributed among two separate carbon markets? In 2030, the European Union wants to have its greenhouse gas emissions reduced by 55 per cent compared to the reference year 1990. This will cost the EU around 2.8 per cent of economic output relative to the status quo and create a gap of 247 billion euros that would otherwise be available for private consumption. In order to meet the climate goals at the lowest economic cost, emissions should be avoided where it is cheapest, the authors recommend. By optimally distributing the amount of CO₂ that the EU can still emit with a 55 per cent target, the costs could be reduced – from 2.8 per cent of EU-wide consumption (247 billion euros) to 1.1 per cent of consumption (95 billion euros).

“More market-based flexibility mechanisms are desirable to achieve a cost-effective allocation of the EU carbon budget.”

With the new emissions trading system and the current distribution of the CO₂ budget, the EU Commission already manages to lower climate protection costs by 22 per cent. If the EU distributes its CO₂ budget wisely, it could even cut costs by up to 61 per cent. Since the level of abatement costs varies greatly between sectors, the decision on how the emissions budget is allocated has a direct and significant influence on the distribution of the economic burden between the individual sectors and EU Member States. The buildings and transport sectors would receive a significantly larger emissions budget, while a major part of the ambitious climate targets would have to be realised by avoiding emissions in the electricity sector and energy-intensive industries.



POSITIVE INCENTIVES FOR MORE CLIMATE PROTECTION

CLIMATE CLUB

ZEW POLICY BRIEF BY DR. MARIUS ALT, DR. CARLO GALLIER,
PROFESSOR MARTIN KESTERNICH AND PROFESSOR BODO STURM

Successful international climate protection requires a more effective incentive scheme that motivates countries to increase their efforts to reduce greenhouse gas emissions. A ZEW study shows why a gradual tightening of national targets alone will not be enough to raise the level of ambition for climate protection. Instead, it is recommended to establish a climate club in which a CO₂ price provides incentives to avoid emissions.

The international community is under enormous pressure to achieve successful results in view of the record to date. According to calculations by Climate Action Tracker, so far only a few countries are on track with the 2-degree target. Instead of relying solely on the signatory states to gradually increase their climate change mitigation contributions, from an economic point of view the principle of reciprocity should become more central. A climate club could offer a solution to this as it relies on international cooperation in climate protection. The members of the climate club agree on a CO₂ price and thus create an incentive for greater emission reductions. At the same time, they negotiate exclusive benefits among themselves, such as free trade agreements or financial incentives for lower emissions. Such positive incentives to cooperate are even more effective than punishment for non-cooperation.

By contrast, the current practice of gradually increasing country-specific climate protection targets (ratcheting) merely relies on the hope that emission reductions will become more ambitious in the future.

The ratcheting mechanism, however, does not change the underlying incentive problem. On the contrary, this mechanism can even prove detrimental as countries that are actively engaged in climate protection continue to bear the costs alone, while all countries benefit from the reduced emissions. As a result, countries are tempted to contribute little or nothing to climate protection. Results from experimental economic research at ZEW show that the current ratcheting mechanism can even have a negative effect, if countries with ambitious goals curb their ambition in order to prevent being free-ridden by others.

Policy Brief:
www.zew.de/
PU83037

SUSTAINABILITY IN PRIVATE HOUSEHOLDS

ENERGY SAVINGS

STUDY BY BETTINA CHLOND AND CLAIRE GAVARD, PHD

French policies to support households in refurbishing their homes for energy savings purposes differ considerably in terms of their cost-effectiveness. A ZEW study has looked into the question of which measure to reduce energy consumption is most cost-effective.

The researchers evaluated four French incentive programmes: a grant scheme for low-income households, a reduction of the value-added tax from 20 to 5.5 per cent and an income tax credit – all three financed by the public sector – as well as energy efficiency certificates (“white certificates”), with which private energy suppliers prove that they have carried out energy-saving measures in their customers’ homes.

These four programmes were analysed in terms of their cost-effectiveness and the redistribution associated with them, using data from a representative survey conducted in 2017 among 45,000 French households. In terms of cost-effectiveness, energy efficiency certificates by energy suppliers perform best, as they achieve the highest savings in household energy costs relative to the subsidy amount received. This could be due to the fact that energy suppliers have an incentive to reach households that have large savings potentials with their programmes. The VAT reduction and the low-income household grant score moderately with respect to cost efficiency. The lowest savings relative to the subsidy amount are achieved with the income tax credit. In terms of distributional effects, the measures under review do not differ significantly. Households in the upper and lower half of the income distribution benefit equally from all four subsidy instruments examined. The results

of the ZEW study are an insightful contribution to the debate on the effectiveness of various measures to reduce energy consumption and emissions in the buildings sector, which accounts for roughly 40 per cent of energy consumption in the European Union. Various EU Member States have already launched a variety of funding programmes to promote the refurbishment of private buildings.

Study:
[www.zew.de/
PU82714-1](http://www.zew.de/PU82714-1)

WHAT TO DO ABOUT CLIMATE CHANGE?

Climate change is having divergent impacts on society, ecosystems and the economy. The effects of climate disruption will become ever more pronounced in the coming years. A variety of strategies and tools have been developed to ameliorate the consequences of climate change. However, as individuals and as a society, we must take action.

EUROPEAN FLOOD DAMAGE
IN EURO BILLIONS

5.3
2022

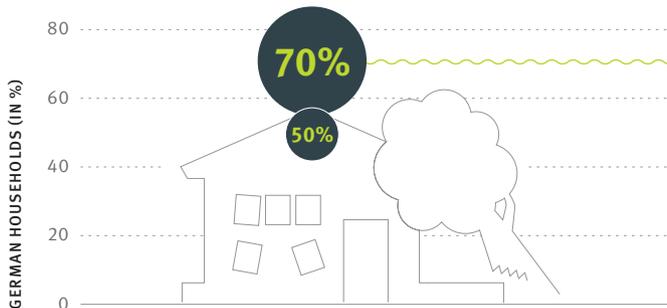
20-40

2050

FLOOD DAMAGE AND FLOOD INSURANCE

Experts anticipate annual damages from flooding in Europe to increase from 5.3 billion euros in 2020 to between 20 and 40 billion euros in 2050.

See page 43 for more



WHILE SOME 70% OF HOUSEHOLDS BELIEVE THEY HAVE FLOOD INSURANCE, ONLY APPROXIMATELY 50% HAVE THE NECESSARY COVERAGE.



IF COVERAGE OF NATURAL DISASTERS WAS A STANDARD FEATURE OF INSURANCE CONTRACTS, HOUSEHOLDS WOULD BE BETTER PROTECTED.

Households have suffered considerable damage from flood events in recent years. What is more, many households incorrectly assume they have adequate insurance coverage.

POWER PRICES AND THE ELECTRICITY MARKET

FOCUS ON THE PRESENT

110%

+10%

In Germany, final accounting for electricity usage is performed once each year. Due to an increased focus on immediate consumption, electricity demand is typically 9 or 10% higher.

For more, see page 41

SHARE OF RENEWABLES
IN GERMAN POWER MIX

Nearly
1/2



2020

Around
2/3



2030

Germany plans to increase the share of renewables to two-thirds of demand by 2030.

AMING GREEN

WIND ENERGY

Local residents often seek to oppose the realization of wind power projects. Furthermore, citizen approval for wind power and interest in green-electricity service plans both fall considerably when turbines are erected nearby. However, this decline is less significant when local residents benefit financially from a new wind park.

FOLLOWING THE CONSTRUCTION OF A WIND TURBINE IN THE IMMEDIATE VICINITY



- ▶ ONLINE SEARCHES FOR GREEN-ELECTRICITY SERVICE PLANS
- ▶ SUPPORT FOR THE GREEN PARTY IN NATIONAL ELECTIONS

See page 78 for more



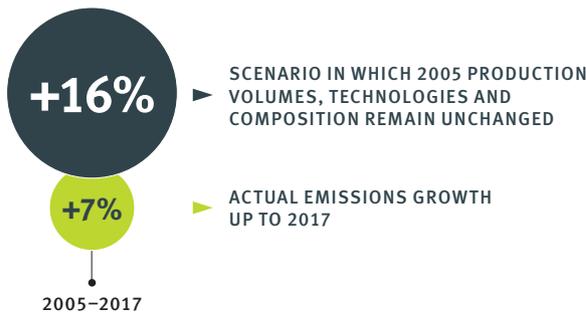
LOCAL SUPPORT CAN BE AUGMENTED WHEN RESIDENTS BENEFIT FINANCIALLY FROM NEW WIND TURBINES.

MANUFACTURING

Emission levels depend on the following factors:

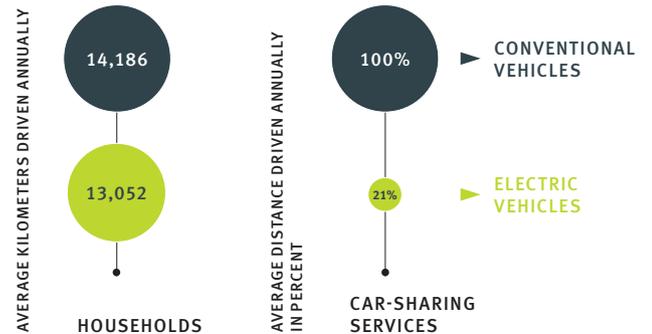


MANUFACTURING EMISSIONS GROWTH (IN %)



Changes in the composition of manufactured products have led to slower emissions growth in the manufacturing sector than would be expected given unchanged material inputs. However, production technologies have become more emissions intensive.

ELECTRIC VEHICLES

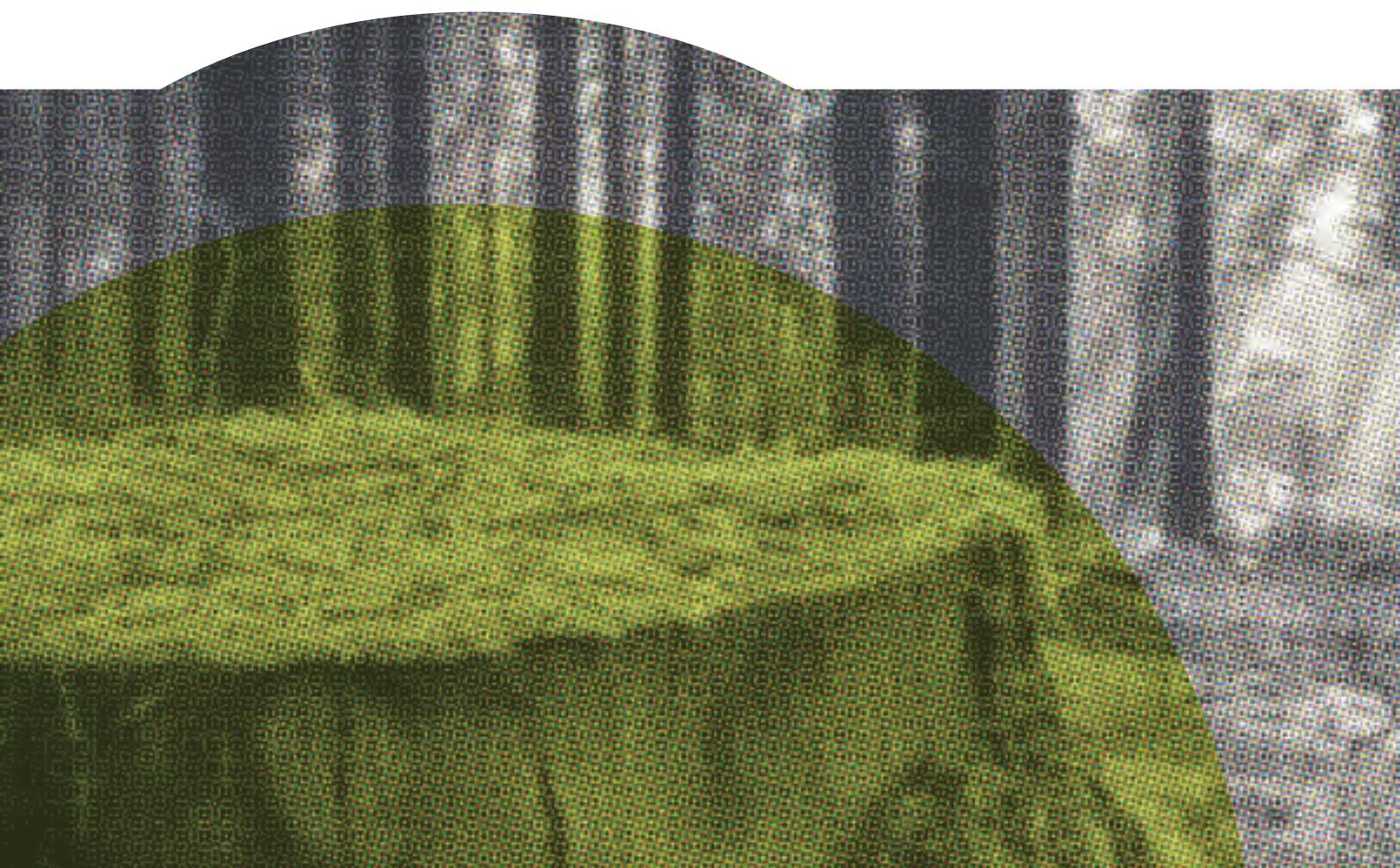


Conventional vehicles are used much more frequently than electric vehicles for long-distance travel. This applies not only to privately owned vehicles, but also to car-sharing services. This disparity may be attributable to fears concerning to the limited range of electric vehicles.



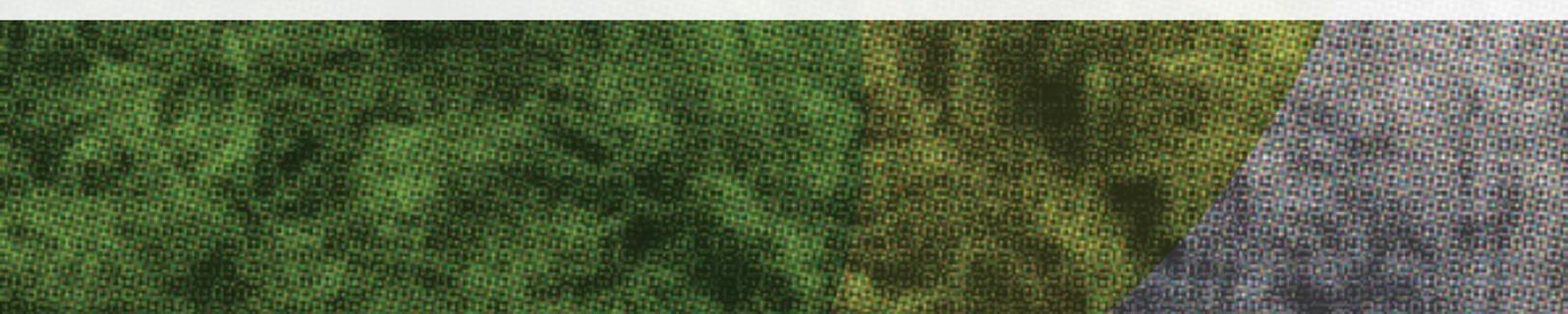
POLICYMAKERS, VEHICLE MANUFACTURERS, AND CAR-SHARING SERVICE PROVIDERS SHOULD WORK TO DEFUSE THIS FEAR.

See page 38 for more



CLIMATE IMPACTS FOR GERMANY

Looking at the different regions, the economy, politics and society in Germany, climate change poses very different challenges. It affects all areas of everyday life. Therefore, it is necessary to act with determination in the common fight against global warming.



DRIVER OF CARBON DIOXIDE EMISSIONS

GERMAN INDUSTRY

STUDY BY ELISA ROTTNER AND PROFESSOR KATHRINE VON GRAEVENITZ, PHD

In order to achieve ambitious climate policy goals, it is particularly important to improve the climate footprint of industry. This sector alone is responsible for around 23 per cent of CO₂ emissions in Germany. A study shows which factors need to be taken into account to reduce emissions in this sector.

Since the introduction of the eco-tax in 1999, numerous political measures have been implemented in Germany and at the European level to lower the consumption of fossil fuels. For example, feed-in tariffs for renewable energies have been in place since 2000 through the Renewable Energy Sources Act, and in 2005 the EU Emissions Trading Scheme (EU ETS) came into force, which puts a price on CO₂ emissions from certain sectors across the EU. With the exception of the EU ETS, most climate policies remain a national matter. Against this background, researchers used administrative microdata to investigate how CO₂ emissions and intensity developed in the German manufacturing sector between 2005 and 2017. In particular, they analyse the role that the scope, composition and techniques of production play for the development of CO₂ emissions in the observation period. They find that despite increased production levels, emissions have not increased to the same extent. By switching to a cleaner production composition from 2011 onwards, emissions in 2017 are nine per cent lower than in the comparison scenario, which assumes a production technique and composition at the 2005 level.

Emission savings would have been even greater if production technology had not become dirtier during this period, i.e. if the emission factors of production had not increased. The CO₂ intensities of production have increased, although the emission factors of the energy sources have generally decreased and the energy mix has tended to become less CO₂-intensive. Rising CO₂ intensities are therefore a consequence of rising energy intensities. This is in contrast to the emphasis and promotion of energy efficiency by policymakers. These results are largely driven by the most energy- and CO₂-intensive sectors, such as chemicals and coke, while less CO₂-intensive sectors show opposite patterns.

Study:
[www.zew.de/
PU82460-1](http://www.zew.de/PU82460-1)

E-MOBILITY

STUDY BY PROFESSOR WOLFGANG HABLA, VERA HUWE AND
PROFESSOR MARTIN KESTERNICH

For longer distances, drivers use vehicles with internal combustion engines far more often than electric cars. This not only applies to privately owned cars but especially car-sharing ones, where the cost structure for both types of driving is the same for customers. According to a study, the reasons seem to lie in the power of habit and range anxiety. In the study, the researchers investigate how the pronounced difference in the use of electric cars and cars with internal combustion engines in car sharing services can be explained: electric cars that were available for use all year round achieved only 21 per cent of the annual mileage of conventional cars. In addition to lower mileage per booking, electric cars are also booked less frequently than conventional vehicles at rental stations offering vehicles with both combustion and electric drive technologies. Price differences are unlikely to be the only reason for the much lower market share of electric cars.

One possible explanation is a status quo distortion, meaning that users much rather prefer the current state and are resistant to change. Another reason for the reluctance to invest in e-mobility could be the result of range anxiety, i.e. the fear of not being able to cover long distances in an electric car. Range anxiety is unfounded, however, for the majority of the distances travelled. Even with very unfavourable assumptions regarding the range and charging possibilities of e-cars, between 82 and 92 per cent of the daily trips made with internal combustion engines could, in principle, also be managed by e-cars. And with moderate assumptions, the proportion is even close to 99 per cent.

It is therefore important that political decision-makers, car manufacturers, and car-sharing providers are able to dispel drivers' concerns. Attractive offers for first-time e-car users could be helpful, for example. Another important task is to expand the public charging infrastructure since the availability and rapid usability of charging stations would definitely help reduce range anxiety.

Study:
[www.zew.de/
PU81739-1](http://www.zew.de/PU81739-1)

GREEN PUBLIC PROCUREMENT

ECO-INNOVATIONS

STUDY BY BASTIAN KRIEGER

Study:
[www.zew.de/
PU82817-1](http://www.zew.de/PU82817-1)

In recent years German and European policymakers have been devoting considerable attention to the issue of green public procurement. By adding green procurement criteria to public sector calls for tender, policymakers hope to encourage the development of environmentally friendly products and processes. A ZEW analysis indicates that green procurement criteria can create an important incentive effect – but not for all firms.

The researchers analysed how green public procurement impacted private-sector environmental innovation in 2008 and 2014. When a company introduces a new product or process that is more eco-friendly than the company's previous product or process, this is termed an 'eco-innovation'. Analysis of these data show that companies acquiring public sector contracts with green criteria are 20 percentage points more likely to introduce environmentally friendly product innovations. However, green public procurement has no statistically significant impact on the introduction of new, environmentally friendly processes (e.g. manufacturing techniques). One possible explanation for this discrepancy is that tender criteria tend to focus on product characteristics, rather than underlying processes. Further sifting of the data shows divergent impacts by company size. The introduction of green products or processes does not become more likely among large companies following the successful acquisition of a public-sector contract with green criteria. By contrast, small and medium-sized enterprises (SMEs) have a 25 percentage point greater chance of introducing environmentally friendly products after winning a public-sector contract with green criteria. Notably, this effect is only observable for products, but not for processes. Ultimately, the study confirms that green public procurement is effective as a demand-side policy tool for encouraging innovation, especially among small and medium-sized enterprises. This suggests that when designing green calls for tender, public procurement officers should consider the needs of small and medium-sized enterprises.



ENSURING SECURE ENERGY SUPPLY

DESIGN OF ELECTRICITY MARKETS

OPINION PIECE BY PROFESSOR ACHIM WAMBACH AND DR. MARION OTT
IN THE 'WIRTSCHAFTSWOCHEN'

The rapid expansion of renewables has created new challenges for security of supply. Long-term forward contracts could help to address them.

By 2030, renewable energy is expected to make up around two-thirds of Germany's electricity supply. There is reason for concern that power outages will increase in the future. Meeting demand when intermittent renewables are not available will likely play a prominent role in energy policy. Security of supply should emerge from the market. A suitable market design can incentivise the expansion of capacity for secure generation and for the choice of technologies that kick in when the power grid is stressed. While many countries have introduced a capacity market in addition to the electricity market, the German government has opted for a so-called energy-only market: generators sell their electricity on the nation-wide market, and the price rises when electricity is scarce. The expectation of price peaks will incentivise companies to invest in new capacity of reliable power generation, the logic goes. For the time being, Germany will keep some coal-fired power plants in reserve. Some have disputed whether an energy-only market is sufficient to ensure the adequacy of resources for security of supply. Instead of introducing a capacity market, the introduction of mandated, standardised long-term forward contracts has been suggested as an instrument to guarantee security of supply. With these forward contracts, generators would commit years in advance of the time of delivery to provide the energy. The total volume of the contracts would cover the majority of electricity demand at the time of delivery. Volume adjustments and make-or-buy decisions to meet the obligation are then made in short-term markets. The three-fold objective of German energy policy is a sustainable, affordable, and secure energy provision. To meet the third goal, the German government should consider using mandated long-term contracts and their integration in the energy-only market.

This opinion piece appeared in a longer version in the 'Wirtschaftswochen' on 11 September 2021.

SUSTAINABLE CONSUMER BEHAVIOUR

ENERGY CONSUMPTION

STUDY BY DR. MADELINE WERTHSCHULTE AND
PROFESSOR ANDREAS LÖSCHEL

Study:
[https://lmy.
de/l1C8p](https://lmy.de/l1C8p)

In Germany, customers usually receive their electricity, water and gas bills once per year. A study examines the extent to which this type of billing causes behavioural distortions in electricity consumption. Paying these bills immediately would avoid such distortions and reduce consumption. The current billing system for electricity, water and gas allows consumers to immediately enjoy the benefits of having these utilities. However, it can take up to a year until they also feel the effects on their bank accounts. This type of billing may have two consequences. First, people find it harder to consider the cost of electricity at the moment they use electrical appliances. This leads to a tendency to 'overvalue the present', meaning that too much attention is given to immediate consumption instead of later payment. Second, uncertainty arises about the actual cost of electricity. Consumption decisions are made on the basis of price expectations instead of actual electricity prices. In a study, 711 representative households in Germany were asked about these two factors.

The researchers find that increased attention to the present coincides with a nine to ten per cent higher electricity consumption. This is best explained by the way electricity is billed: If too much attention is paid to immediate consumption, future costs are neglected and more is consumed. At the same time, there is no correlation between actual electricity prices, electricity price expectations and electricity consumption. Thus, when price variations are small, people do not seem to adjust their electricity consumption. The time lag between consumption decisions and billing can reduce the effectiveness of climate policy instruments such as CO₂ prices or other environmental taxes. Consumers are more likely to undervalue these costs in their decisions and are less likely to react to price changes. Immediate payments would circumvent this problem since the costs would become more visible. This would also benefit society as a whole, as lower electricity consumption reduces environmental costs such as CO₂ emissions.



CO₂ COMPENSATION BY CITIZENS

LOCAL CLIMATE PROTECTION

STUDY BY LARA BARTELS, PROFESSOR MARTIN KESTERNICH AND
PROFESSOR ANDREAS LÖSCHEL

A large number of participants in a survey by ZEW and the University of Münster took the opportunity to voluntarily donate part of their expense allowance to the Bundesgartenschau Mannheim 2023 gGmbH for urban reforestation initiatives in preparation for the 2023 German National Garden Show (BUGA). The money was used to plant four Caucasian wingnuts in the eastern part of the newly emerging Käfertal park in May 2021. Looking at the survey results, it can be seen that the willingness of participants to donate trees is significantly greater than the willingness to voluntarily offset CO₂ by retiring certificates from emissions trading.

With regard to voluntary climate protection measures, the results are surprising for two reasons: on the one hand, emissions trading is the leading instrument of European climate policy, whereas afforestation projects currently only play a supporting role on the path to climate neutrality. Natural CO₂ absorbers such as forests or bogs are primarily intended to compensate for emissions that cannot be avoided or can only be avoided at very high cost. On the other hand, the ability of new forests to compensate for CO₂ emissions is associated with many uncertainties, such as water supply and soil quality.

In an additional survey, the researchers find a possible explanation for the observed behaviour in the fact that trust in afforestation projects is higher than in emissions trading. This leads to political challenges. Afforestation projects can play an important role in climate protection, especially against the background of their many positive local effects such as the reduction of air pollutants, the protection against soil erosion and the increase of

biodiversity. However, the main focus should be on strengthening trust in emissions trading. As both in the German Climate Change Act and in the European Climate & Energy Package, the contribution of natural ecosystems to climate protection plays an important role, the study is the first to provide evidence for the great support this approach has among the population.

Study:
[www.zew.de/
PU83013-1](http://www.zew.de/PU83013-1)

AVERTING CLIMATE DAMAGE

FLOOD PROTECTION MEASURES

AN INTERVIEW WITH DR. DANIEL OSBERGHAUS AT THE FEDERAL MINISTRY OF EDUCATION AND RESEARCH

How can we arm ourselves against extreme weather events and other natural disasters?

In the case of natural disasters such as the July 2021 floods, it is difficult to take precautionary protective measures. However, there are at least three areas in which action can be taken: First, considering the human toll exacted by the floods, we need to improve our disaster management techniques – for example, by implementing systems to warn or evacuate the population. Secondly, a viable system needs to be developed to manage financial damage, as the current disaster insurance market is insufficient. Third, we should encourage local government and households to implement measures that reduce the damage caused by extreme weather events, which are becoming increasingly common.

Are there any limits to insurance coverage amounts?

According to the portrayals of insurance companies, insurance against flood damage currently remains feasible in Germany. “Currently remains” is the operative phrasing here, as flooding is expected to become more common with increasing climate change. If the international community fails to achieve its climate action ambitions, the losses attributable to floods in Germany may exceed the coverage capabilities of insurers. In addition, there are already limits to the insurance available in high-risk locations. In some places, for example, households can only get insurance with high deductibles. However, this currently affects only a very small share of residential properties in Germany.

Why does flood risk vary by income level?

Flood risk is mediated by the local probability of flooding, the property at risk, and the adaptive capacities of households. “Adaptive capacity” refers to the ability of households to avert or address damage through insurance coverage or preventative measures. Our data indicate no significant divergence in flood risk by income level – both poor and rich households live in risk zones. Vulnerable assets are obviously higher amongst affluent households, but such households also have a significantly higher adaptive capacity. Our results show that, measured by income, poorer households are exposed to a significantly higher risk of flood damage than rich households. This is mainly due to the lower prevalence of financial and technical precautions.

This interview was first published by the Federal Ministry of Education and Research.



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AND HEALTH POLICY



#01

**PENSIONS AND
SUSTAINABLE
FINANCIAL MARKETS**

- SAVINGS AND OLD-AGE PROVISION
- FINANCIAL LITERACY
- FINANCIAL SITUATION OF HOUSEHOLDS DURING COVID-19 CRISIS
- EXPECTATION FORMATION IN FINANCIAL MARKETS
- BANK LENDING AND ITS IMPACT ON THE REAL ECONOMY



HEAD

Prof. Dr. Tabea Bucher-Koenen

DEPUTY HEAD

Dr. Karolin Kirschenmann

FOUNDING OF THE MANNHEIM INSTITUTE FOR FINANCIAL EDUCATION (MIFE) IN COLLABORATION WITH THE UNIVERSITY OF MANNHEIM

- The inaugural conference featured over 150 participants from around the world.
- Research prize awarded by Deutsche Bundesbank

Financial education of the population is of great importance for individual as well as for societal well-being, economic stability and social participation – now more than ever. Individuals with higher financial literacy accumulate higher pension wealth, are more likely to invest in the stock market and are less likely to be over indebted.

A joint initiative of the University of Mannheim and ZEW, the Mannheim Institute for Financial Education (MIFE) is dedicated to researching issues surrounding financial education. It draws on the expertise of researchers from various disciplines in order to conduct research on financial literacy as it pertains to all population groups. MIFE studies both financial literacy, i.e. the knowledge and abilities required to make sound financial decisions, and the ways in which financial literacy can be improved through educational and informational measures. At the same time, MIFE offers a platform for scholarly exchange and for developing ties with policymakers and practitioners.

A conference dedicated to “Financial Literacy Across the Disciplines” was held on 29 and 30 November 2021. At the conference, which was attended by over 150 participants from academia, policymakers and practitioners, keynote talks were given by Professor Claudia Buch (Deutsche Bundesbank), Professor Annamaria Lusardi (George Washington University) and Professor David Leiser (Ben Gurion University of the Negev). The Deutsche Bundesbank Early Career Research Prize on Financial Literacy was awarded for the first time at the conference. The recipients received a 5,000 euro prize.

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MIFE

MANNHEIM INSTITUTE
FOR FINANCIAL EDUCATION

CONTACT

Prof. Dr. Carmela Aprea
Prof. Dr. Tabea Bucher-Koenen

<https://www.uni-mannheim.de/en/mife>



IS THERE A NEED FOR A REVERSE MORTGAGE MARKET IN GERMANY?

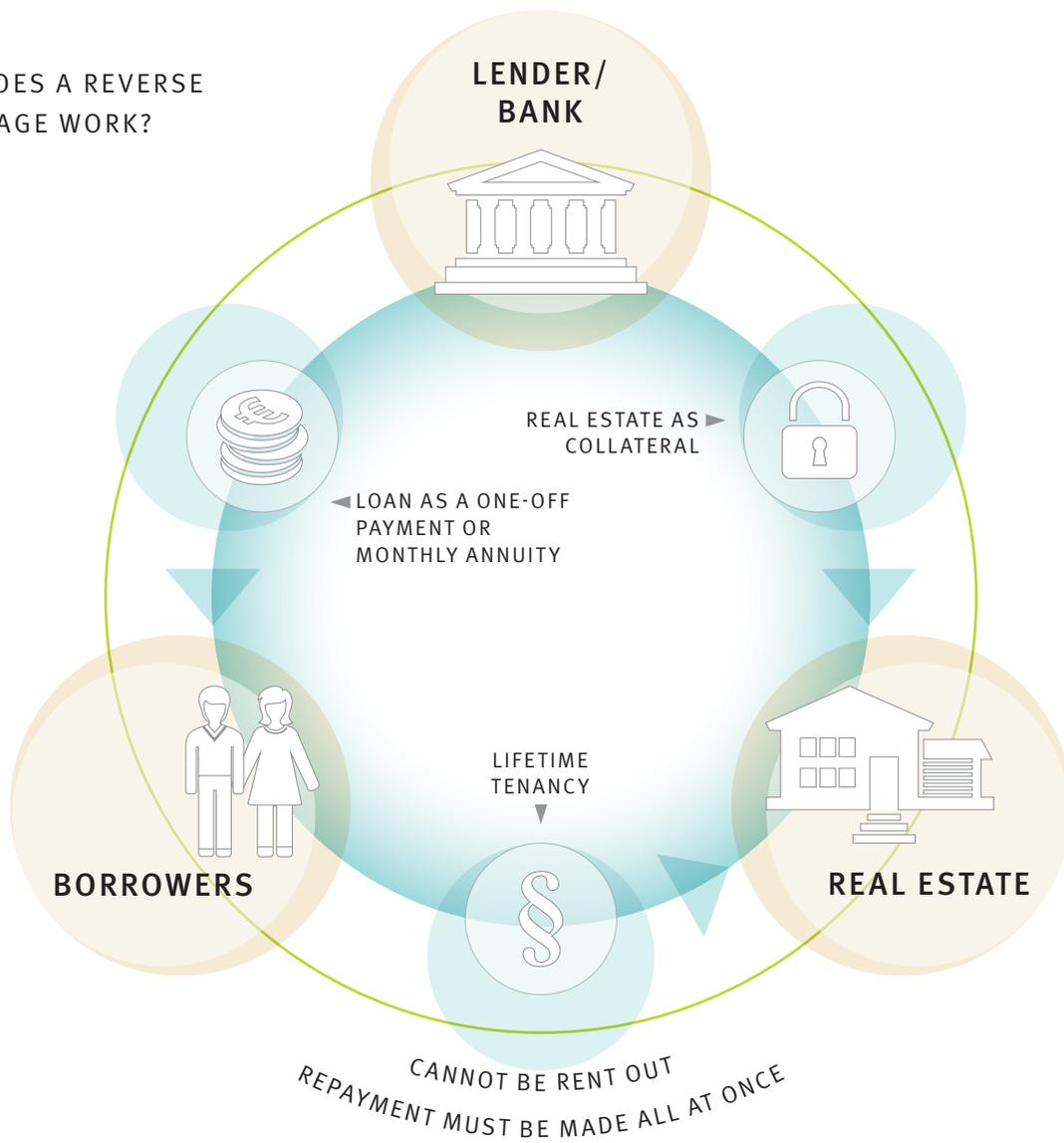
- Compared to other products for old-age provisioning, the market for reverse mortgages is hardly developed – but there is significant potential for growth.

Building up sufficient capital for old-age provision is a challenge for many households. One option is the purchase of real estate. However, owner-occupied real estate does not generate an active income stream in old age. In some countries, this has led to the development of so-called reverse mortgages. A reverse mortgage enables households to access the value of their real estate assets in the form of a one-off payment or as a monthly annuity. At the same time, the retiree remains the owner of the property.

To calculate the market potential for reverse mortgages in Germany, ZEW researchers drew on data from the Socio-Economic Panel (SOEP). In 2017, an estimated 420,000 German households composed of individuals aged 65+ not only had a debt-free property, but were also dissatisfied with their income. Of these, however, only 42,000 households would have met the usual minimum conditions for a reverse mortgage. Statistics on the financial situation of households provide another basis for estimating the market potential of reverse mortgages. In Germany there are around 200,000 households that own real estate and have an income below the poverty line.

According to the authors of the study, the market has substantial growth potential. In general, reverse mortgages are a compelling option for households who wish to remain the owners of their property. Yet they are not only of benefit for pensioners who are in need of additional income. They also provide a vehicle for wealthier households to optimise their retirement and succession planning. However, the growth of the market will depend on the financial education of households, marketing activities by financial service providers, and a clear legal framework. Government guarantees could be a sensible tool for facilitating access to reverse mortgages amongst low-income households with real estate assets, the study's authors conclude..

HOW DOES A REVERSE MORTGAGE WORK?



SOURCE: www.deutsche-teilkauf.de/immobilien-teilverkauf/umkehrhypothek

#02

**LABOUR MARKETS AND
SOCIAL INSURANCE**

- EDUCATIONAL EXPANSION
- EQUAL OPPORTUNITY AND SOCIAL MOBILITY
- DIGITALISATION OF THE WORKING WORLD
- HEALTH AT WORK
- WAGES AND EMPLOYMENT
- IMMIGRATION AND INTEGRATION



HEAD

PD Dr. Friedhelm Pfeiffer
(acting head until 14 July 2022)
Prof. Dr. Nicolas Ziebarth (as of 15 July 2022)

DEPUTY HEAD

Prof. Dr. Melanie Arntz

HEAD

JUNIOR RESEARCH GROUP

Integration of Migrants and Attitudes Towards the Welfare State (IMES)

Dr. Katrin Sommerfeld

ENGAGEMENT ON THE PART OF CIVIL SOCIETY IMPROVES THE SOCIAL INTEGRATION OF REFUGEES

- In regions with higher volunteer activity, refugees receive more help and speak better German.
- Women and low-skilled refugees benefit in particular from civil-society engagement.

The migration of refugees to Europe reached an all-time high in the autumn of 2015. The social integration of these refugees is a long-term challenge for the government, economy and society. By 2019, about half of the refugees who came to Germany between 2013 and 2016 had found a job, and a similarly high proportion could demonstrate good or very good German language skills. These outcomes are attributable in part to the support given to refugees by civil society.

A recent ZEW study on regional differences in civil-society activities spotlighted the connection between local initiatives and the social integration of refugees. Strong rates of volunteerism were not only associated with higher life satisfaction among refugees, but also better German language skills. Women and refugees with a low level of educational attainment benefited in particular from local volunteer activities. Strong rates of volunteerism were also associated with more support for refugees to find housing and secure their financial situation. Volunteerism did not seem to enable more rapid integration into the labour market, however.

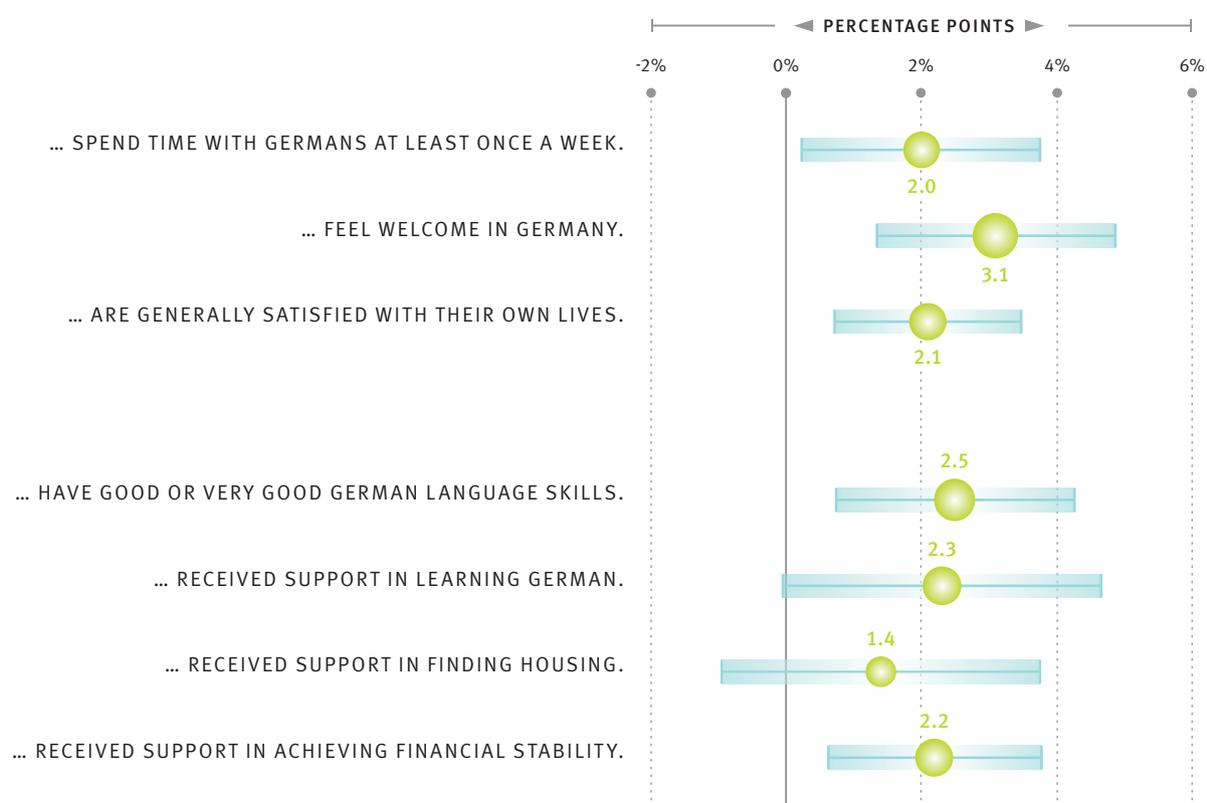
The results suggest that volunteerism from civil society and support from public institutions can effectively complement each other.

ZEW EXPERT BRIEF

“Wir schaffen das!
Zivilgesellschaftliches
Engagement und die
soziale Integration von
Geflüchteten”

www.zew.de/PU82981-1

CORRELATION BETWEEN CIVIC ENGAGEMENT AND THE LIKELIHOOD THAT MIGRANTS...



SOURCE: IAB-BAMF-SOEP survey among refugees 2016–2019, own calculations

BINDING PRIMARY SCHOOL RECOMMENDATIONS HAVE AN EFFECT ON SCHOOL PERFORMANCE

- Binding primary-school recommendations improve academic performance.
- However, such recommendations also increase the pressure on pupils to perform, thus augmenting grade anxiety.

After primary school, German pupils are sent to different types of secondary schools depending on their educational performance. The category of secondary school that one attends is generally of great significance for an individual's subsequent education. While the majority of the German states leave the final decision on the type of school to the parents, in some states, pupils are only able to access to the higher school types if they receive a recommendation from their primary school.

A ZEW study demonstrated for the first time that the binding nature of primary school recommendations has an effect on the educational performance and psychological stress faced by pupils before they transition to secondary school.

First, the study confirmed that 61 per cent of the primary school pupils surveyed would like to go to a Gymnasium, the type of school one must usually attend to later enrol in university (see figure). This desire, in combination with binding primary school recommendations, results in increased pressure to perform and better academic performance, the study shows.

However, binding primary school recommendations cause young learners to feel more anxious about their grades and the future, and their enjoyment of learning can also suffer. Measured performance in mathematics, reading, listening and spelling was significantly higher among pupils subject to binding recommendations. In mathematics, for example, the difference in knowledge attainment corresponded to approximately five weeks of additional schooling.

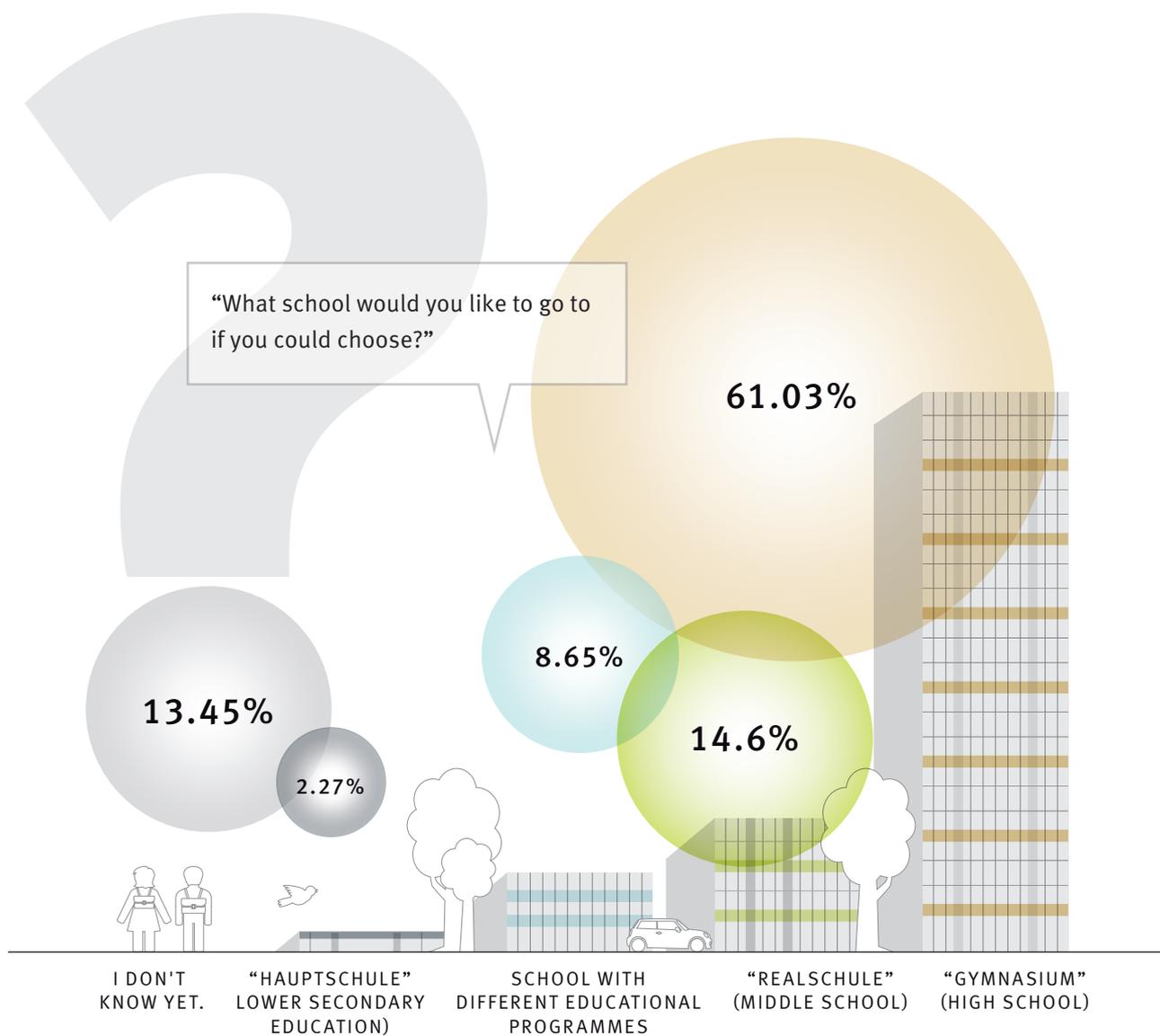
Whether the primary school recommendation should be binding is at the discretion of parents and policymakers. The decision also depends on whether one is prepared to expose primary school pupils to increased performance pressure, including its benefits and drawbacks.

ZEW POLICY BRIEF

“Mit verbindlichen
Grundschulempfehlun-
gen erreichen Grund-
schüler/innen bessere
Leistungen, empfinden
aber auch mehr Stress”

www.zew.de/PU82481-1

TYPE OF SCHOOL THE CHILDREN WANT TO ATTEND AFTER THEIR FOURTH YEAR



SOURCE: NEPS-SC2, wave 6: 4th year.



#03

DIGITAL ECONOMY

- THE DIFFUSION OF DIGITAL TECHNOLOGIES
- DIGITAL PLATFORMS
- DIGITAL MARKET DESIGN
- MEASURING DIGITALISATION
- ECONOMIC EFFECTS OF DIGITALISATION



HEAD

Prof. Dr. Irene Bertschek

DEPUTY HEAD

Dr. Dominik Rehse

HEAD

JUNIOR RESEARCH GROUP

Digital Market Design

Dr. Dominik Rehse

REMOTE WORK TREND CONTINUES APACE

- The pandemic has led to the expansion of remote work, which is likely to continue as a long-term trend.
- Firms plan to increase reliance on remote work.

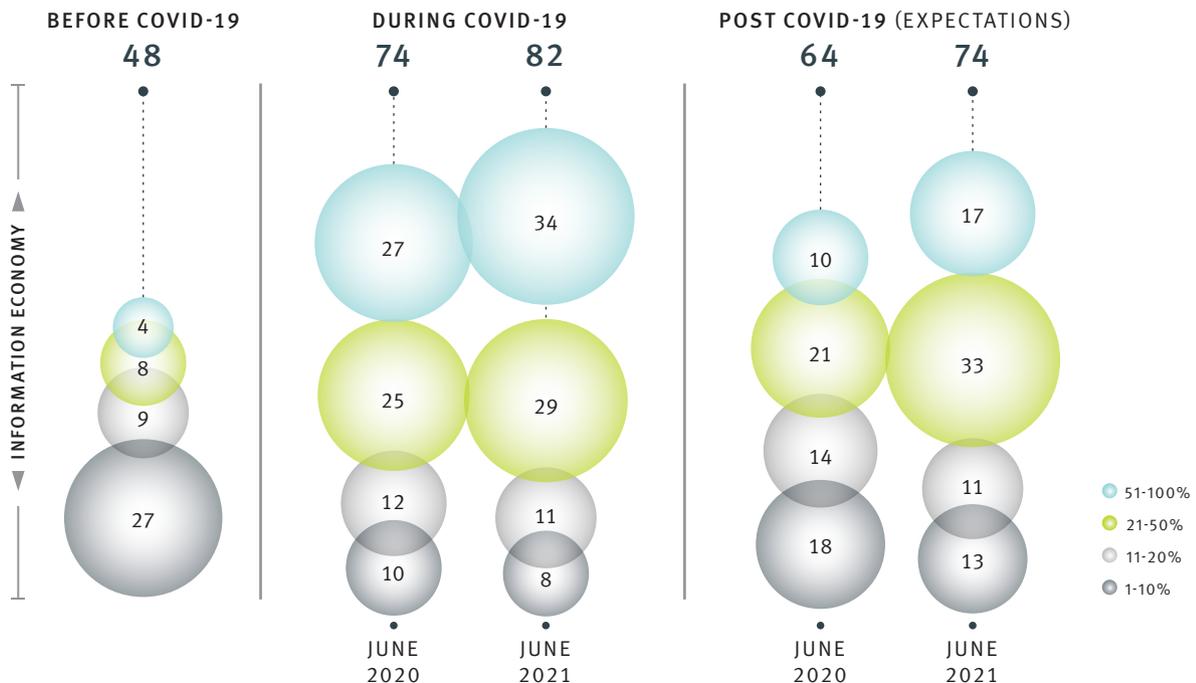
With the outbreak of the pandemic, many German companies anticipated that remote work arrangements would persist long into the future. A survey of businesses conducted by ZEW in June 2021 confirmed that this expectation was not unfounded. Some companies even made upward adjustments to their expectations concerning the scope of remote work following the pandemic.

Before COVID-19, about half of the companies in the information economy had allowed some of their employees to work from home at least once a week. In June 2020, 64

LINK

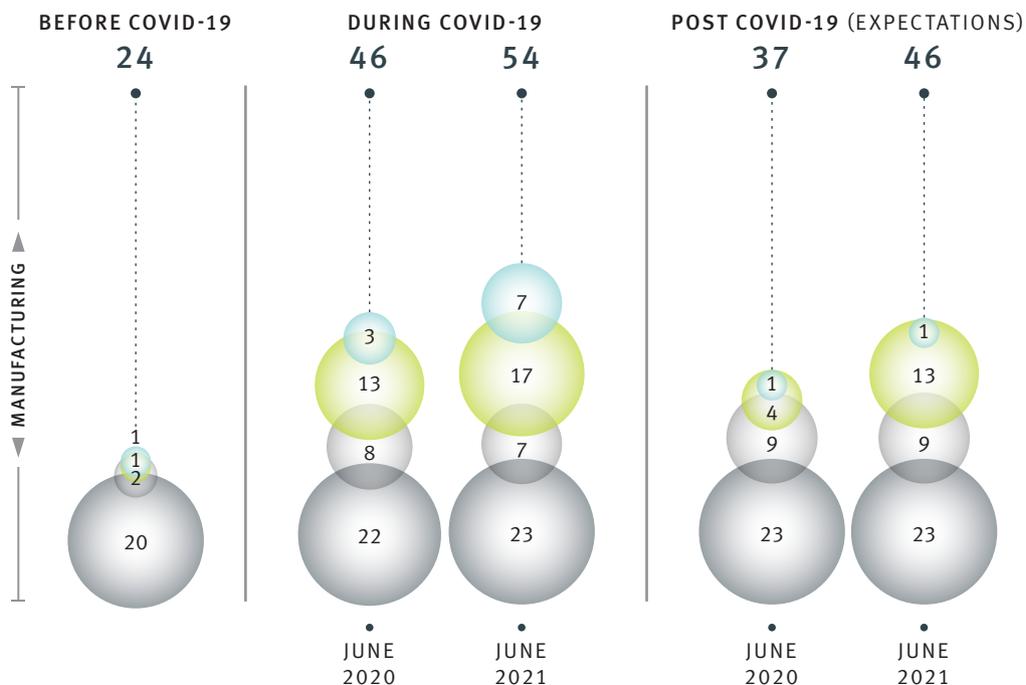
ZEW Business Survey
in the Information
Economy, 2Q21
www.zew.de/PU82728-1

SHARE OF EMPLOYEES WORKING FROM HOME BEFORE, DURING, AND AFTER COVID-19



per cent of companies indicated they were planning to offer remote work in the post-pandemic period. One year later, this figure had increased to 74 per cent. At the same time, the number of employees who were likely to take advantage of remote work in the post-pandemic period had also grown. In June 2021, about every second company in the information economy assumed that over the long term, more than 20 per cent of employees would work from home at least once a week. One year prior, only one in three companies expressed this expectation.

In the manufacturing industry, the frequency of remote work is lower due to location-bound activities. However, companies in this sector nevertheless expect a long-term increase in remote working arrangements. In June 2021, about 46 per cent of companies in the manufacturing industry expected some of their workforce to work from home at least once a week following the pandemic. In June 2020, 37 per cent expressed this expectation. Before the pandemic, just 24 per cent of companies allowed remote work on a regular basis.



In June 2021, 17 per cent of companies in the information economy expected that more than half of their employees will work from home at least once a week after the pandemic.

SOURCE:
ZEW Business Survey
in the Information
Economy, 2021.

TAILORED MARKETS ENABLE THE EFFICIENT ALLOCATION OF DATA

- Data should be available at the right time, in the right place and for the right actors.
- Corresponding market design must do justice to the special features of data as an economic good.

A number of regulatory initiatives, such as the EU Data Governance Act, the EU Data Act, or the data law currently being considered by German policymakers, aim to derive greater social benefits from data. With this end in mind, lawmakers aim to create new data intermediaries as well as establish new rights and obligations when using and providing data.

What all of these policy initiatives have in common is that they aim to improve the allocation of data as an economic good by virtue of a tailored market design. However, many of the known solutions for economic allocation problems are not immediately applicable to data, since data has some special features as an economic good.

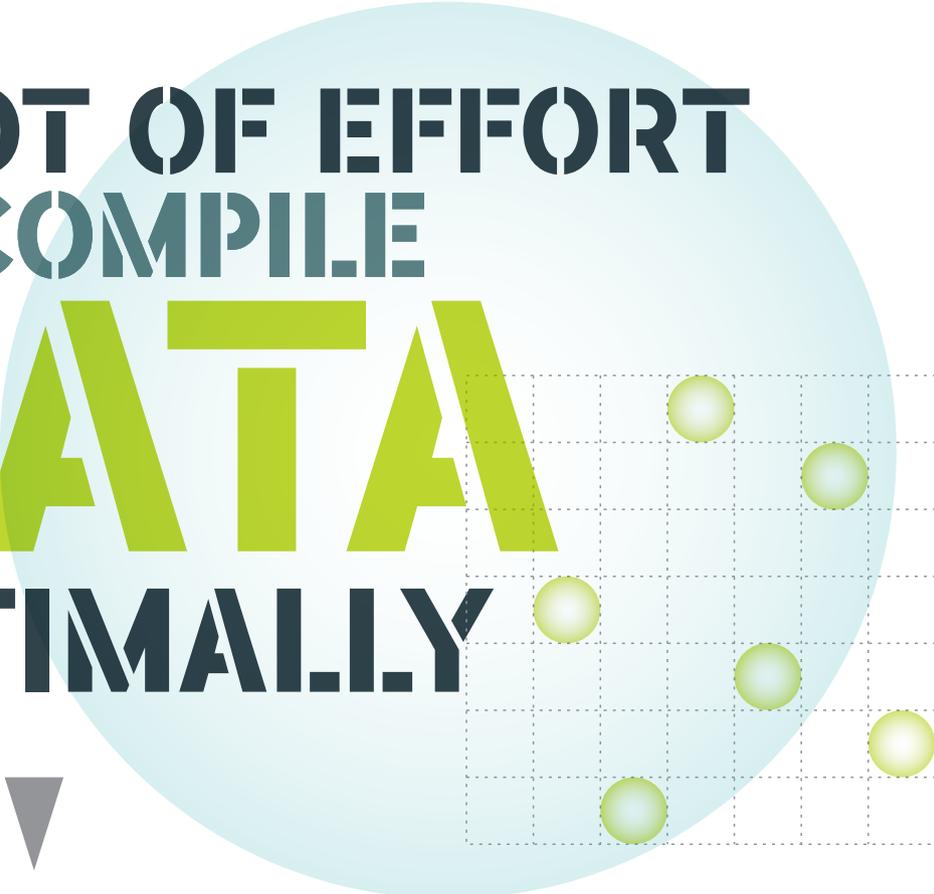
In addition to the much-discussed protection of personal information, the property of data as an infinitely usable commodity is significant from a market design perspective. This makes it difficult to apply allocation mechanisms that rely on scarcity. In addition, data points usually have complex relationships with each other. Some data sets are substitutable, while others are only useful in combination with each other. From the point of view of the data consumers, it is important to determine which data sets could provide them with which benefits and, based on this, to determine their willingness to pay. The number of data sets that needs to be assessed with a view to willingness to pay is normally very large, as the illustration makes clear. Therefore, complex and costly calculation procedures are necessary. This leads to a trade-off between the cost of these procedures and the more precise determination of willingness to pay that this allows. Precisely this issue is being examined as part of a project titled “Incentives and Economics of Data Sharing”, which is being funded by the Federal Ministry of Education and Research. The project is expected to improve allocation mechanisms for data.

PROJECT

“Incentives and Economics of Data Sharing”

<https://ieds-projekt.de>

IT TAKES
**A LOT OF EFFORT
 TO COMPILE
 DATA
 OPTIMALLY**



FOR THE SELECTION OF 10 DATA POINTS OUT OF 100 DATA POINTS, THERE ARE **17,310,309,456,440** POSSIBILITIES.

FOR THE SELECTION OF 10 DATA POINTS OUT OF 1,000 DATA POINTS, THERE ARE **263,409,560,461,970,249,875,456** POSSIBILITIES.

FOR THE SELECTION OF 10 IMAGES OUT OF 14,197,122 IMAGES, WHICH CORRESPONDS TO THE SIZE OF THE MOST COMMONLY USED DATA SET FOR IMAGE RECOGNITION, THERE ARE

91,672,428,040,860,362,064,381,284,558,197,984,932,163,248,368,657,845,561,768,017,920 POSSIBILITIES.

FOR COMPARISON: FOR SELECTING THE 6 CORRECT NUMBERS IN A TYPICAL 6/49 LOTTERY GAME, THERE ARE **13,983,816** POSSIBILITIES.

#04

**ECONOMICS OF INNOVATION
AND INDUSTRIAL DYNAMICS**

- INVESTMENTS IN THE FUTURE AND ECONOMIC CRISES
- CORPORATE INSOLVENCIES
- PUBLIC RESEARCH SPIN-OFFS
- WEB-BASED INNOVATION INDICATORS
- INNOVATION AS A BASIS FOR MARKET POWER?
- HIDDEN CHAMPIONS
- GREEN START-UPS



HEAD

Dr. Georg Licht

DEPUTY HEAD

Jürgen Egel, Prof. Dr. Bettina Peters,
Dr. Christian Rammer

HEAD

JUNIOR RESEARCH GROUP

Competition and Innovation

Prof. Dr. Bernhard Ganglmair

SPIN-OFFS FROM PUBLIC RESEARCH INSTITUTIONS ARE ON THE RISE

- ZEW researchers have developed a new method for identifying knowledge-based spin-offs.
- Leading German institutions have IP-based spin-off rates similar to renowned institutions in the US and Europe.

Spin-offs from public research institutes and universities are an important source of innovation, growth and jobs. German policymakers have thus enacted two measures to promote spin-off activity: the Excellence Initiative and the Pact for Research and Innovation.

Working with the Fraunhofer Institute for Systems and Innovation Research (ISI), ZEW economists within this research department have developed a new measurement technique for identifying knowledge-based spin-offs. Application of this method indicates that the number of knowledge-based spin-offs has increased significantly over the last decade, rising 7.3 per cent per annum in 2011–2019. Accordingly, leading German universities and public research institutions have a similar level of IP-based spin-off activity as renowned research institutions and universities in Europe and the US. At the same time, there are clear regional differences in the creation of spin-offs in Germany, as such activity is concentrated in Berlin, Munich and Karlsruhe.

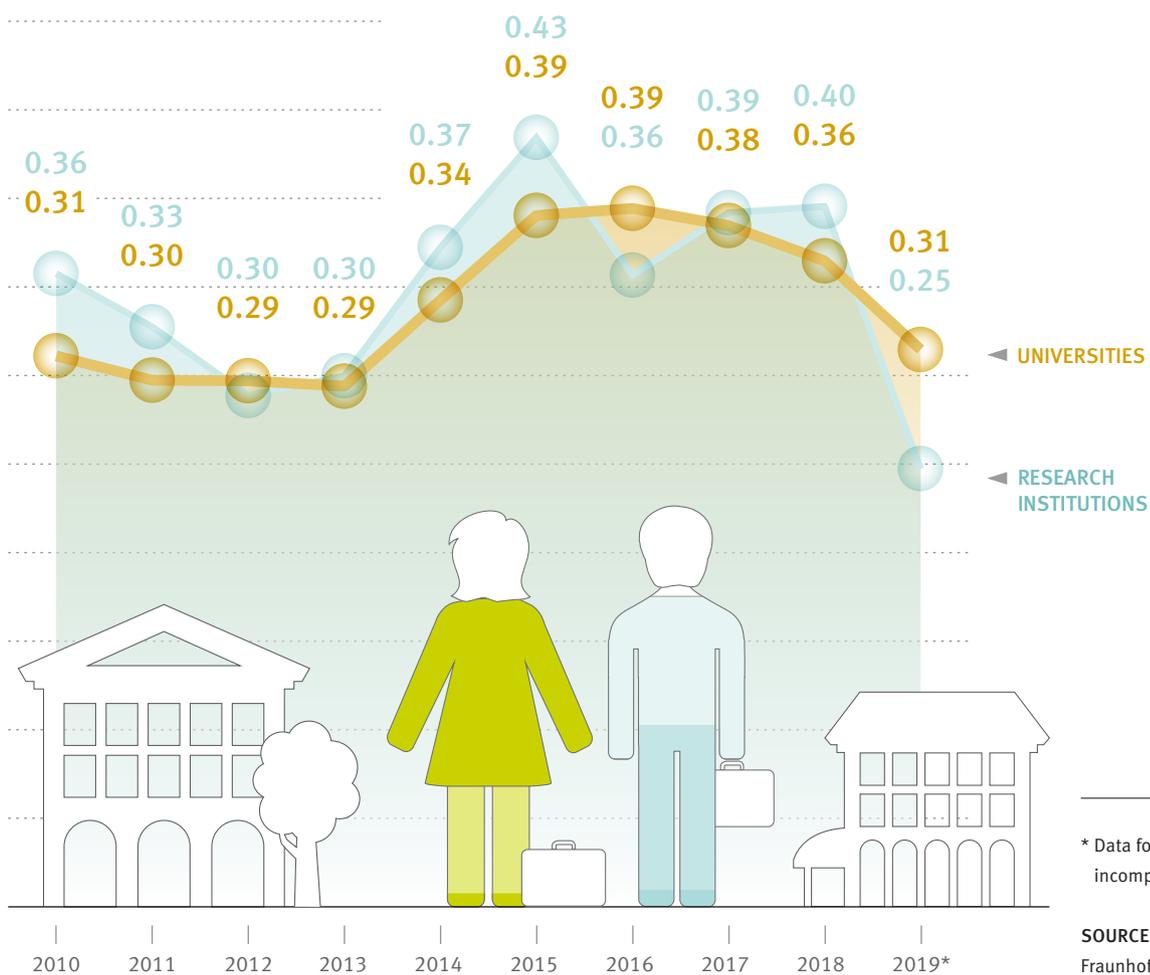
According to the study, the availability of venture capital is not a problem for spin-offs per se. However, it is difficult to achieve visibility among investors. IP-based start-ups outside the large research clusters and venture capital centres often have difficulty accessing the investment financing required to scale up their business models. Furthermore, investors are often reluctant to invest in knowledge-based innovation because research-intensive companies take a relatively long time to generate adequate returns. The study also shows that institutions in entrepreneurial ecosystems where various factors interact – namely, first-class research, entrepreneurialism, venture capital and appropriate regulatory frameworks – are the most successful.

STUDY

“Spin-Offs from Public Research Organisations in Germany: A Comprehensive Analysis Based on Bibliometric, Patent, Website and Company Register Data”

www.zew.de/PU82911-1

NUMBER OF SPIN-OFFS PER 100 RESEARCHERS FROM UNIVERSITIES AND NON-UNIVERSITY RESEARCH INSTITUTIONS



COVID-19 CRISIS WEIGHS ON THE FUTURE-ORIENTED INVESTMENT OF GERMAN COMPANIES

- Spending on innovation by German companies fell 3.6 per cent in 2020.
- SMEs more pessimistic about opportunities for future-oriented investment than large companies.

Innovation spending by companies in Germany fell 3.6 per cent to 170.5 billion euros in 2020. This is a key finding of the German Innovation Survey, which is part of the European Community Innovation Survey (CIS). ZEW recently conducted an investigation of the Innovation Survey on behalf of the German Ministry of Education and Research. Corporate planning during the first months of the crisis did not indicate that the decline in spending on innovation would be this pronounced. Companies primarily made cuts to “innovation investments” (-10.0 per cent), a category that includes machinery, equipment and software. When the prospects for economic growth are uncertain, companies tend to reduce their investments in innovation.

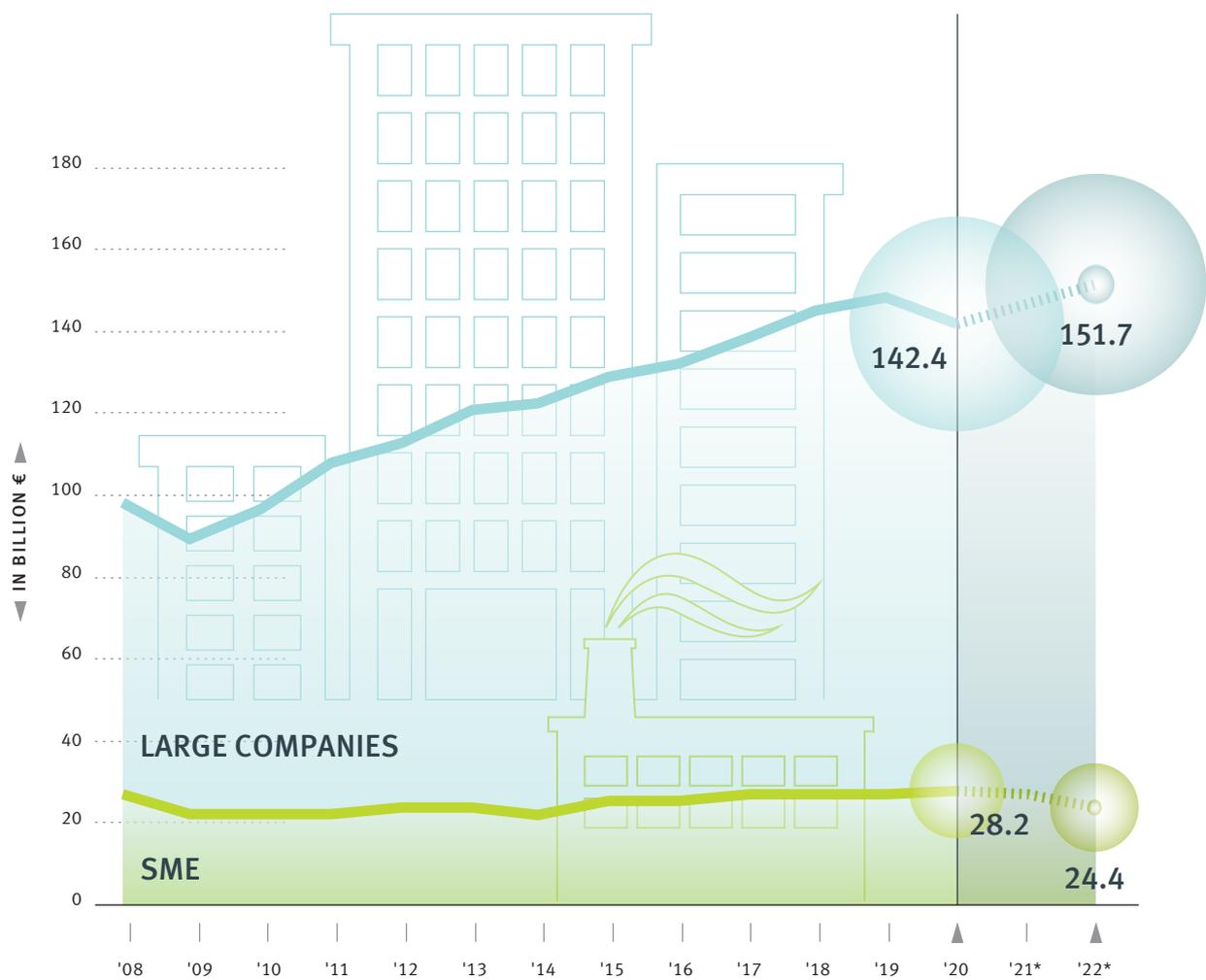
The economic slowdown that began even prior to the start of the pandemic exacerbated the economic effects of the lockdowns in 2020. While in the first half of 2020, companies were planning to moderately increase their innovation spending in 2021, such increases were unlikely to have occurred, given the planning revisions that took place in 2020. Major uncertainties also surround the economic recovery expected by companies in 2022. The pandemic has had divergent effects on the future-oriented investments of each sector. While the pandemic has led to rising innovation expenditures in various branches, including technical services, information and communication services, and chemicals and pharmaceuticals, there have been sharp declines in metalworking, mechanical engineering, plastics processing and, above all, vehicle manufacturing. Small and medium-sized enterprises increased their innovation expenditures slightly in 2020 (+0.3 per cent), while large companies recorded a significant decline of 4.4 per cent. 2020 thus shows a weakening of the trend observed over the last two decades – namely, that of ever-growing divergence between the innovation activity of SMEs and large companies. However, SMEs were significantly more pessimistic concerning 2021 and subsequent years than large companies, and anticipated declining outlays on future-oriented investment, while large companies anticipated a return to higher spending.

STUDY

“ZEW Innovation Survey 2021”

www.zew.de/WS109-1

INNOVATION EXPENDITURE BY THE GERMAN ECONOMY



* The values for 2021 and 2022 are planned figures.

SOURCE: Mannheim Innovation Panel



#05

MARKET DESIGN

- AUCTIONS
- MATCHING MARKETS
- ALLOCATION PROCESSES
- BEHAVIOURAL ECONOMICS



HEAD

Prof. Dr. Vitali Gretschko

DEPUTY HEAD

Dr. Marion Ott

NODAL ELECTRICITY PRICES AS THE BASIS FOR THE RESILIENT POWER MARKET OF THE FUTURE

- Electricity markets based on nodal prices take real grid conditions into account during market clearing and price formation.
- This type of market design is better suited to the requirements of the clean energy transition than the current uniform pricing system.

In the German electricity market, market clearing does not consider actual grid conditions. This is problematic, for when there is a high demand for electricity in Southern Germany and a large supply of cheap wind energy in the north, insufficient grid capacity means that not enough electricity can be delivered from north to south. In order to account for the capacity limits of the electricity grid and to meet demand in the event of a bottleneck, transmission system operators select additional plants to provide power on one side of the bottleneck and select plants on the other side of the bottleneck that must not provide power although they won a contract in the spotmarket. Affected plants receive special compensation for such “redispatch”, which costs over one billion euros per year (see figure).

In order to discuss the transition to a system based on “nodal prices”, the research department hosted an expert workshop together with the partners in the Kopernikus project “SynErgie”, which is funded by the Federal Ministry of Education and Research. International experts exchanged views on the advantages and disadvantages of such a system, which is used in various countries, such as the US. Redispatch is not required, as market clearing is conducted in a manner that directly takes grid capacities into account. The advantages of such a system are particularly evident given the challenges associated with ever higher shares of variable renewables and an increasing demand for electricity. A white paper by the SynErgie consortium builds on the findings of the workshop, showing paths towards an implementation of a nodal system in Germany.

WORKSHOP

“SynErgie Workshop on Electricity Market Design”

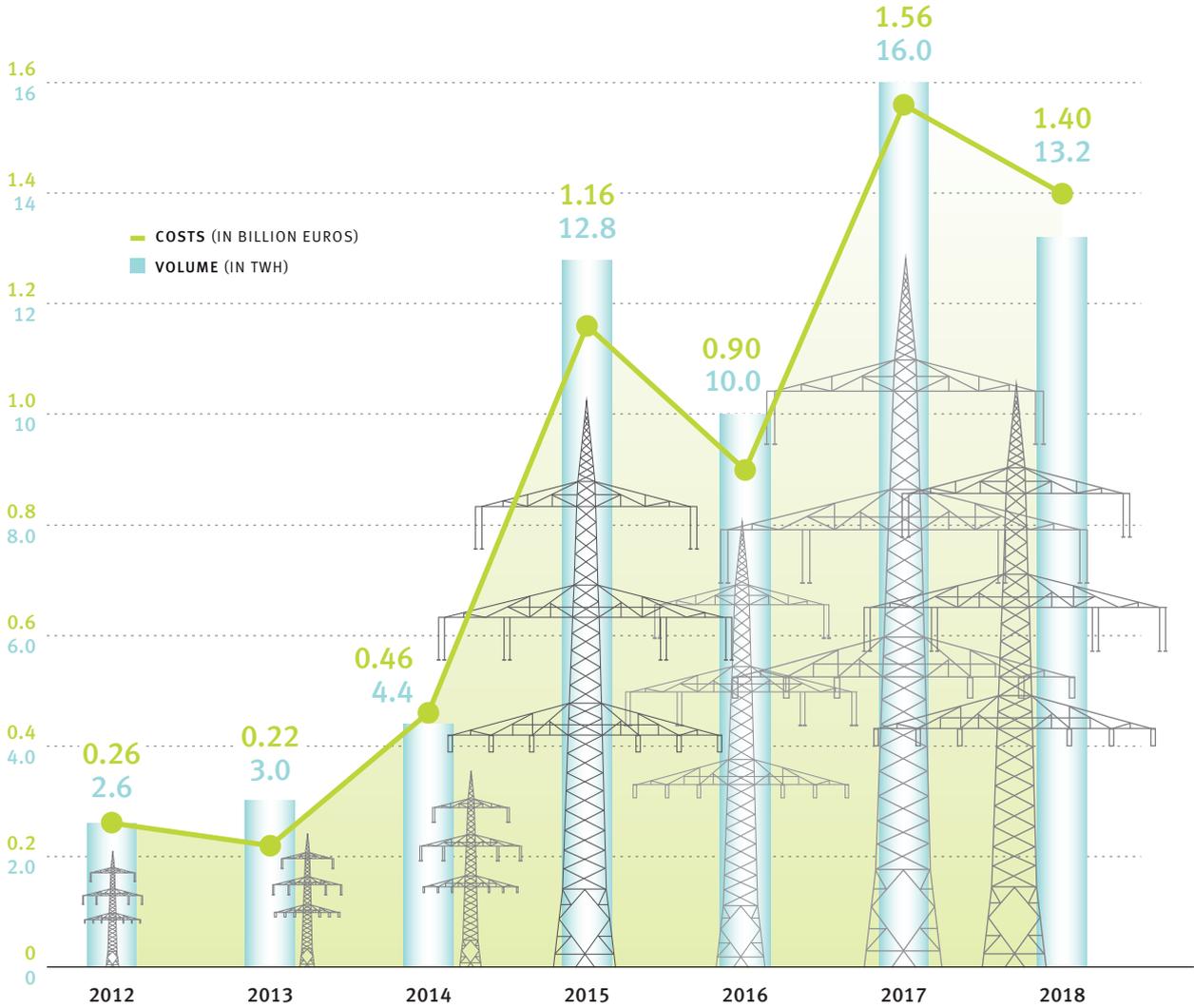
www.zew.de/VA3575-1

WHITEPAPER

“Electricity Market Design 2030 – 2050: Moving Towards Implementation”

<https://doi.org/10.24406/fit-n-640928>

REDISPATCH MEASURES IN GERMANY INCLUDING COUNTERTRADING,
GRID RESERVE, FEED-IN MANAGEMENT



SOURCE: Hirth, Schlecht, Maurer, Tersteegen (2019): "Cost- or Market-Based? Future Redispatch Procurement in Germany"

ZEW SOFTWARE SUCCESSFULLY USED TO ASSIGN DAYCARE SPOTS IN CITY OF KAISERSLAUTERN

- In March 2021, ZEW held a “Matching Day” for daycare centres in Kaiserslautern.
- Previous system for allocating daycare spots caused long queues while also violating municipal rules.

Like most German cities, until last year Kaiserslautern used a decentralised system for the allocation of daycare spots. The old system entailed long queues, strategic behaviour by parents, and the violation of municipal allocation criteria. After the special software program developed by ZEW to assign daycare spots proved its worth over the past three years in cities with up to 35,000 inhabitants, Kaiserslautern, which has 100,000 inhabitants, adopted the solution in 2021 in order to increase transparency and fairness. In an initial step, the criteria catalogues defined by the facilities were implemented in the software program, and the children were pre-sorted according to these criteria for the respective day care centre. In a second step, the heads of the 57 daycare centres met in mid-March for a digital “Matching Day” in which they extended placement offers to the children. Since the parents had already indicated their preferences about daycare centres, the amount of care, and the start of care, the software was able to make a decision automatically in each case on behalf of the parents.

ZEW researchers had previously performed simulations to estimate how long the method would take in larger cities such as Kaiserslautern. Specifically, the researchers simulated the number of matching rounds required before the algorithm could be terminated, varying the demand per spot and the prevalence of private daycare centres. As was expected from the simulations, the procedure in Kaiserslautern ended after about ten rounds, and took two hours.

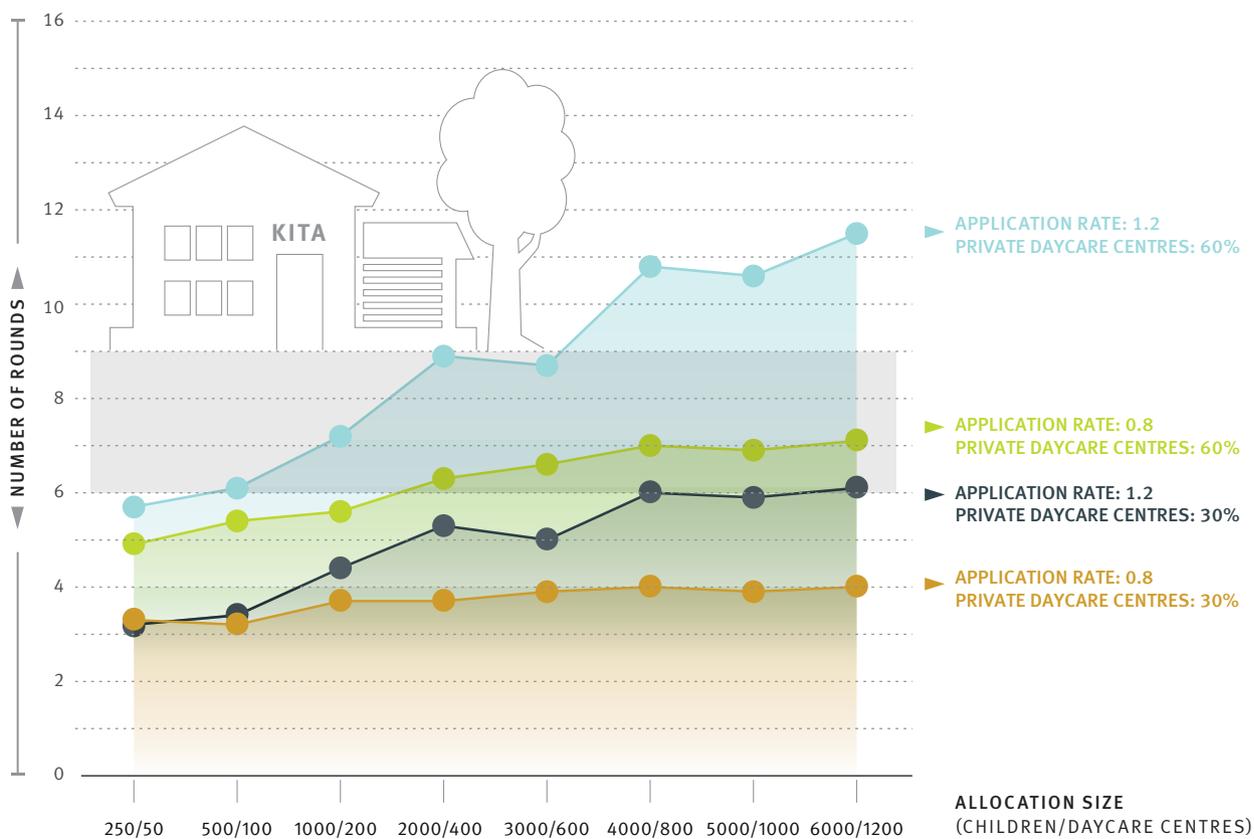
With the successful use of the program in Kaiserslautern, the software – called “Kita Match” – is poised for adoption on a larger scale in the coming years.

STUDY

“An Iterative Deferred Acceptance Mechanism for Decentralized, Fast and Fair Childcare Assignment”

www.zew.de/PU83040-1

NUMBER OF MATCHING ROUNDS REQUIRED AS MARKET SIZE INCREASES



SOURCE: ZEW

#06

**ENVIRONMENTAL AND
CLIMATE ECONOMICS**

- CLIMATE AND ENERGY POLICY EVALUATIONS
- SUSTAINABLE BEHAVIOUR
- INTERNATIONAL COOPERATION FOR CLIMATE ACTION
- CLIMATE-FRIENDLY ENERGY SYSTEMS



HEAD

Prof. Dr. Sebastian Rausch

DEPUTY HEAD

Prof. Dr. Martin Kesternich,
Prof. Kathrine von Graevenitz, PhD

THE EXPANSION OF WIND POWER DECREASES LOCAL SUPPORT FOR RENEWABLE ENERGY

- Together with external partners, ZEW examined local approval for the expansion of renewable energy.

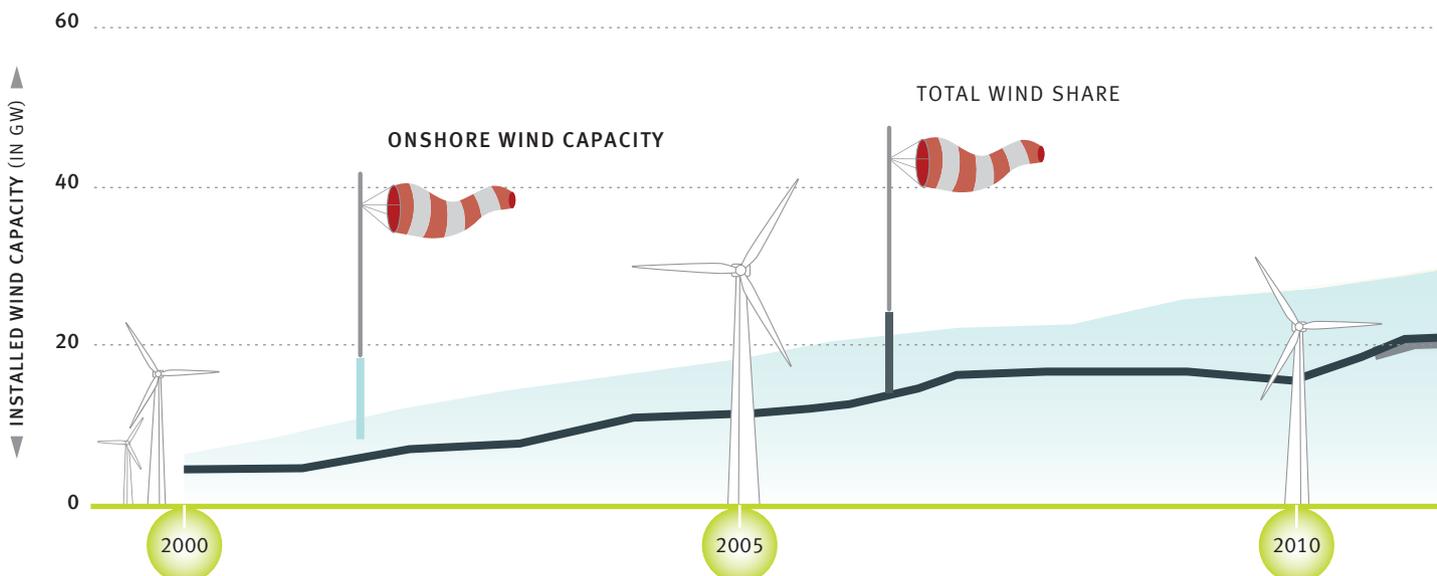
The fight against climate change necessitates large-scale expansion of renewable energy. However, the success of the transition to renewables will depend crucially on public acceptance and support. Working in collaboration with Mines ParisTech and the University of Mannheim, ZEW investigated how preferences amongst households for green electricity evolved when a wind turbine was installed in the immediate vicinity. The researchers found that searches for renewable electricity tariffs at price comparison websites dropped by around 35 per cent when a wind turbine was installed in a given postal code area.

STUDY

“Support for Renewable Energy: The Case of Wind Power”

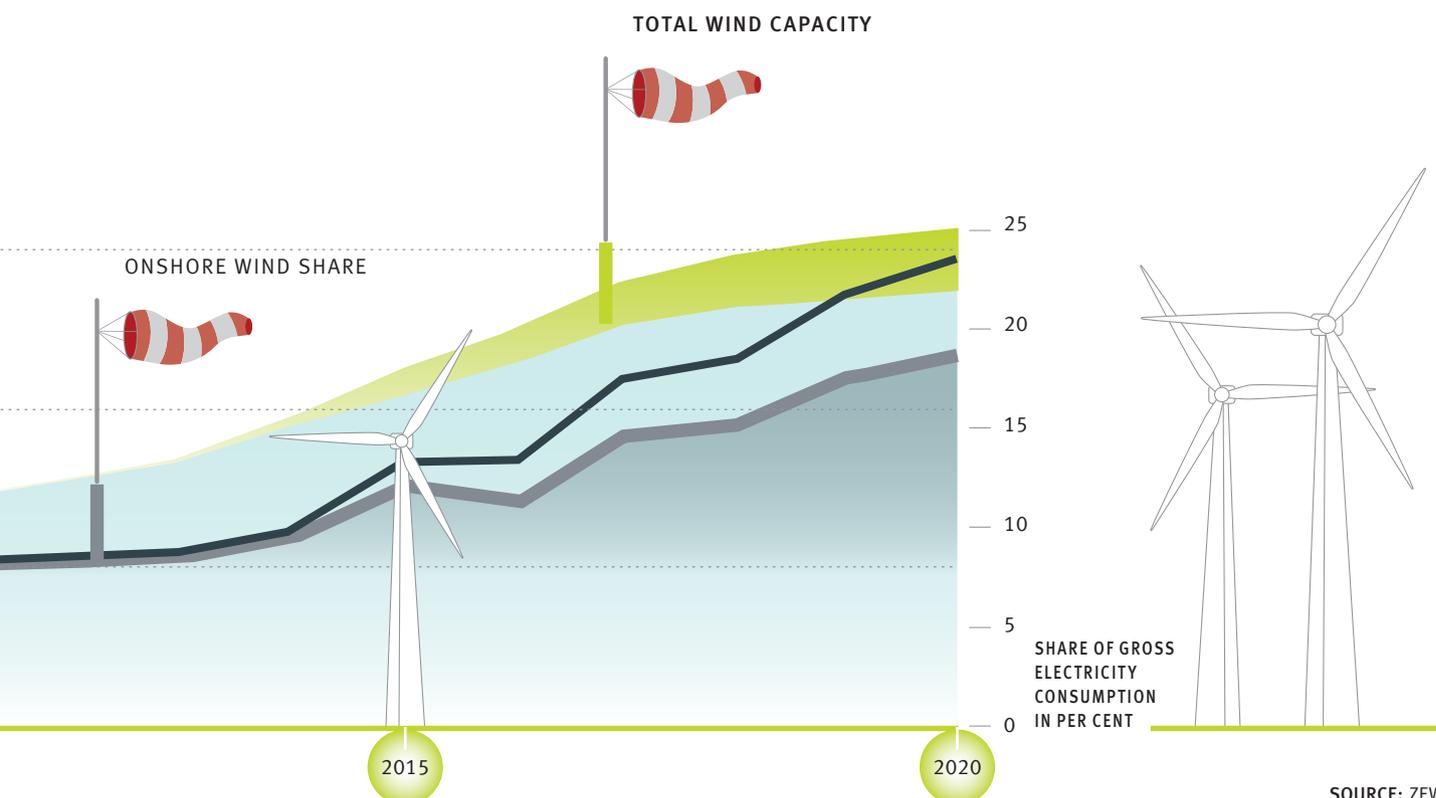
www.zew.de/PU82831-1

INCREASE IN THE SHARE OF WIND POWER IN ELECTRICITY GENERATION IN GERMANY OVER THE LAST 20 YEARS



However, policymakers can help to counteract this trend. According to the study, such negative impacts on popular support for renewables are mediated by distance. In particular, the detrimental impact on public support declines in relation to the distance of the new turbine from the local town centre. Legal minimum distances between wind farms and residential areas could thus reduce opposition to wind power development. However, such regulations significantly limit the area available for the construction of new wind turbines in a densely populated country such as Germany.

In addition, the policy could allow affected communities to receive a share of the financial proceeds from wind turbines – for example, policymakers could enable communities to take a direct investment stake in wind farm projects. At the same time, wind turbine revenues are subject in Germany to a local business tax. The study suggests that local support could be strengthened if communities were to receive direct financial benefits from the presence of wind turbines. The researchers identified the municipalities that benefited from tax reform. Support for renewable energy in these municipalities showed a smaller decline following the installation of wind turbines.



SOURCE: ZEW

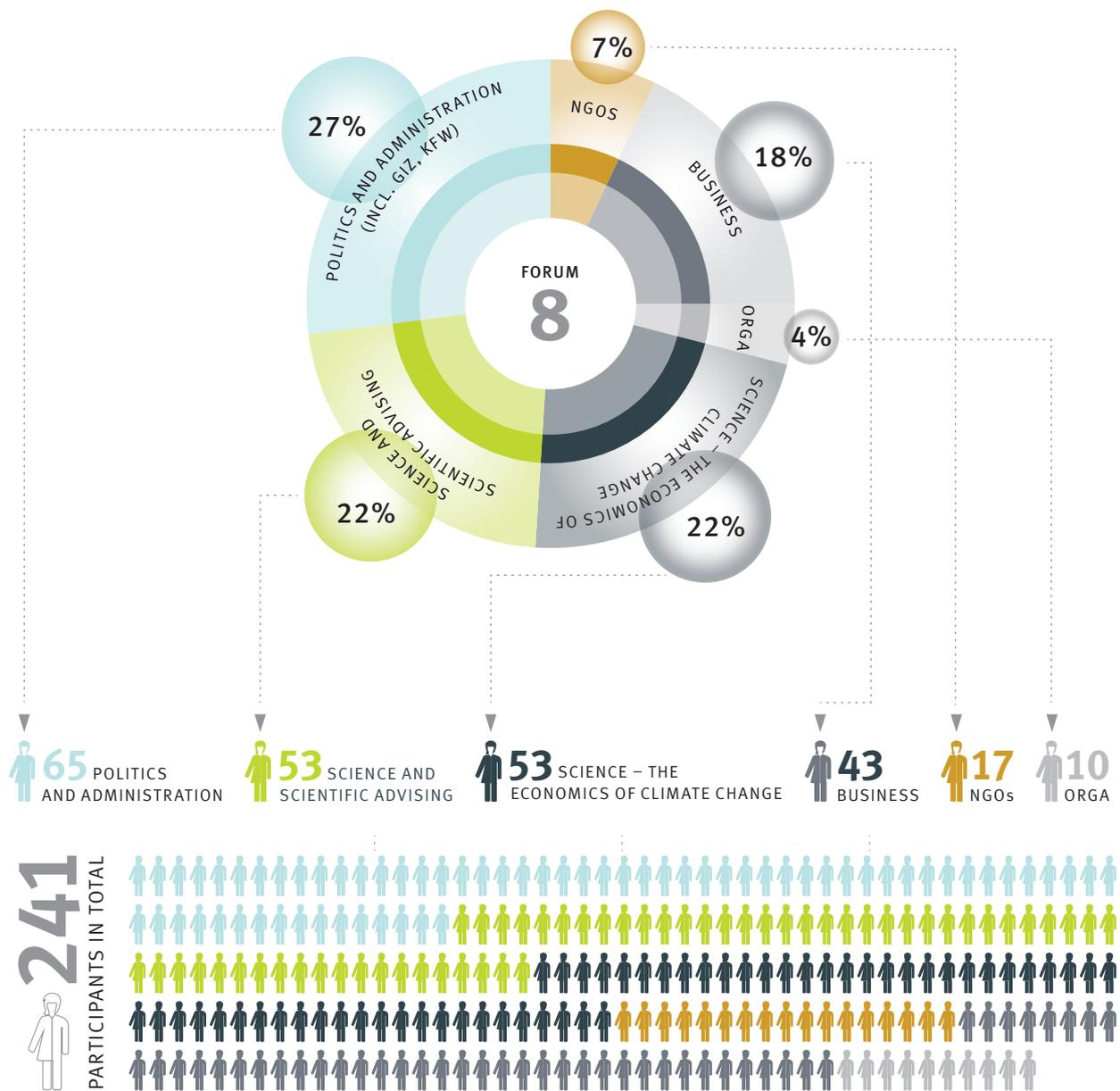
FORUM ON CLIMATE ECONOMICS ON THE IMPORTANCE OF INFORMATION FOR GOOD CLIMATE POLICY

- ZEW hosted the eighth Climate Economics Forum, which featured representatives from business, politics and civil society.

As part of the national Dialogue on Climate Economics, ZEW is responsible for coordinating contributions on “climate policy instruments”. The eighth Climate Economics Forum, hosted by ZEW, was held in February 2021 in a virtual format. Following welcoming speeches by BMBF State Secretary Professor Wolf-Dieter Lukas and ZEW President Professor Achim Wambach, a discussion was held on the importance of information availability for effective climate policy. This discussion featured European Parliament member Delara Burkhardt; ZEW Research Associate Professor Andreas Löschel; Udo Sieverding, executive member of the NRW Consumer Protection Authority; and Joachim Lutz, dean of the Faculty of Business Administration at the University of Mannheim. The more than 240 participants from business, politics and civil society were able to contribute to the debate with an interactive online tool, which enabled them to ask questions or share personal experience.

The event was preceded by two virtual roundtables, each featuring 30 high-level stakeholders from different domains. The roundtables were chaired and moderated by the research department’s own Professor Kathrine von Graevenitz and Professor Martin Kesternich. The findings of the roundtables were later incorporated into the Climate Economics Forum as video segments that served as a springboard for further discussion. As part of the Economics of Climate Change II funding programme being run by the Federal Ministry of Education and Research, ZEW participated in seven research projects on the topics of climate economics and climate policy. In addition to hosting the eighth Climate Economics Forum, the research department released a large number of publications, and also organised numerous events over the last three years – including an interactive simulation game designed to familiarise high-school students with current issues in climate policy.

DIVERSITY OF PARTICIPANTS AT THE EIGHTH CLIMATE ECONOMY FORUM



SOURCE: ZEW



#07

**INEQUALITY AND
PUBLIC POLICY**

- INEQUALITY
- TAX AND SOCIAL POLICY
- REGIONAL POLICY
- LIFE CYCLE AND THE FAMILY



HEAD

Prof. Dr. Sebastian Siegloch (until 31 May 2022)

Prof. Dr. Holger Stichnoth (as of 1 June 2022)

DEPUTY HEAD

Dr. Michaela Slotwinski,

Prof. Dr. Holger Stichnoth (until 31 May 2022)

THE DISTRIBUTIONAL EFFECTS OF PARTY PROGRAMMES FOR THE 2021 FEDERAL ELECTION

- Reform proposals diverge significantly in terms of distributional effects.

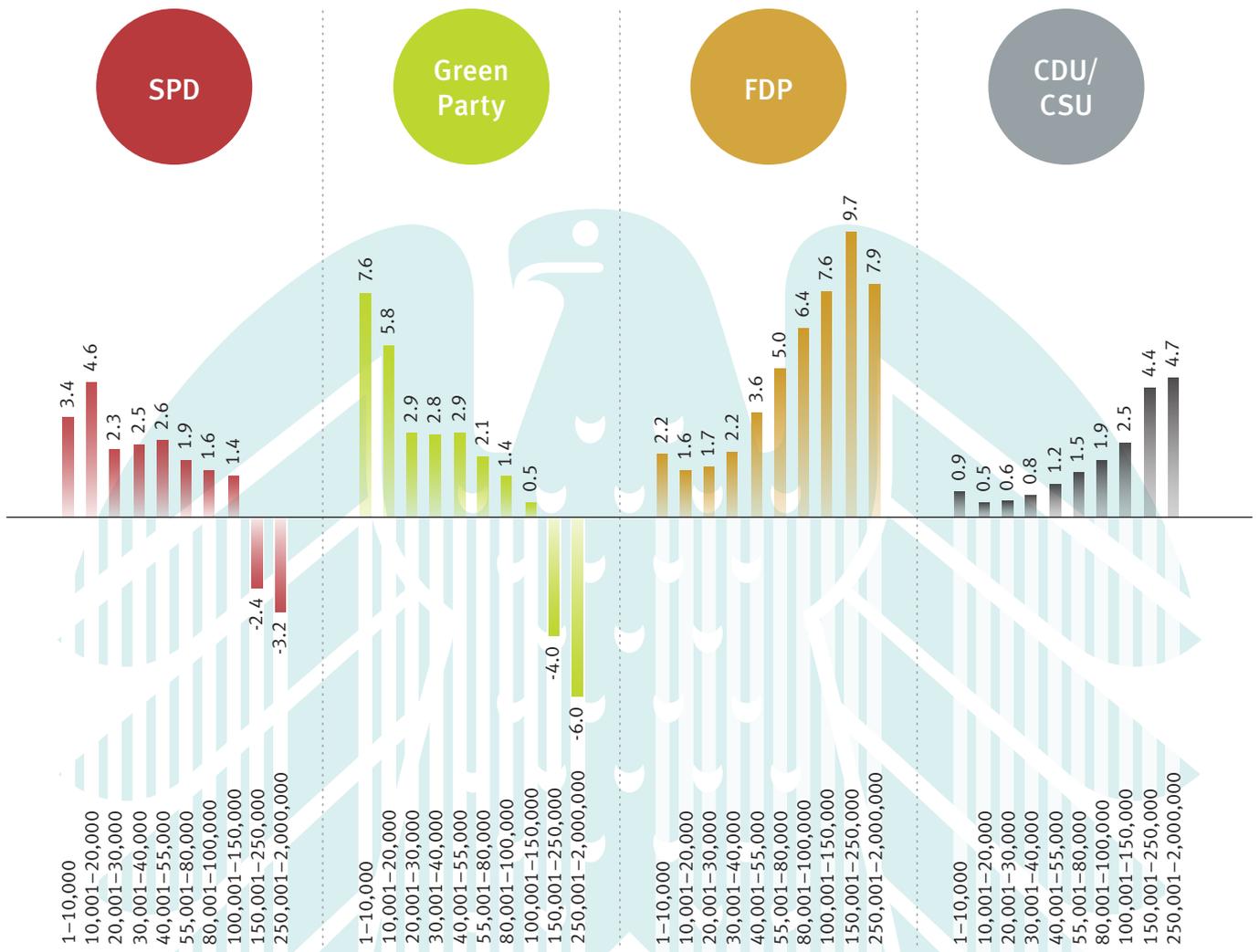
How would the election programmes of the CDU/CSU, SPD, Greens, FDP and Die Linke affect household incomes? In the run-up to the 2021 election, ZEW researchers investigated this question in collaboration with the newspaper Süddeutsche Zeitung. The researchers took into account party proposals regarding taxes, the minimum wage, employment regulations, and family policy (including child benefits). The financial consequences of the reform proposals for different income categories were simulated using EviSTA, ZEW's assessment model for tax and transfer policy.

The reform proposals made by the parties in the run-up to the Bundestag elections would have clearly divergent distributional effects. The proposals made by the FDP and the CDU/CSU would reduce the burden on all income classes, without offsetting measures for revenue collection. The higher income brackets would experience significantly more relief than low and middle income earners. By contrast, the platforms of the SPD, Die Linke, and the Greens would mean an increase in income from net wages and social transfers, especially for lower and middle income households. This would be financed by higher taxes for high-income households and the wealthy. As a result, income inequality would decrease if the proposals of the SPD, the Greens and Die Linke were implemented, whereas the proposals of the CDU and the FDP would tend to increase inequality.

The study was cited by numerous media organisations. For example, the ARD news show Kontraste reported on it. The study's findings were also discussed on the talk show Hart aber fair.

ZEW EXPERT BRIEF
"Reformvorschläge der
Parteien zur Bundestags-
wahl 2021 – Finanzielle
Auswirkungen"
www.zew.de/PU82666-1

WHICH INCOME CLASS BENEFITS HOW MUCH FROM THE PARTIES' PROPOSALS – AND WHO LOSES?



SOURCE: ZEW, own calculations

A HIGHER SHARE OF WOMEN ON EXECUTIVE BOARDS HAS A POSITIVE IMPACT ON COMPANY VALUE

- Study on the effects of gender quotas in several European countries.

Women are significantly underrepresented in German corporate boardrooms. The Leadership Positions Act – which came into force in 2015 and was further developed in 2021 – aims to increase the share of female executives by introducing quotas. Other countries have already gathered significant experience with such quotas. Researchers from ZEW and the New Economic School in Moscow analysed the effects of such quotas based on data from Norway, Italy, Spain, the Netherlands, Belgium and France, where legally binding quotas of between 33 and 40 per cent apply, as well as the United Kingdom, where a 25 per cent quota is recommended.

The study concludes that a higher share of women on the executive board has a positive effect on company value. In particular, the study found that women are more likely to shed non-performing assets and less likely to engage in so-called empire building, which focuses on size and influence but not necessarily on value.

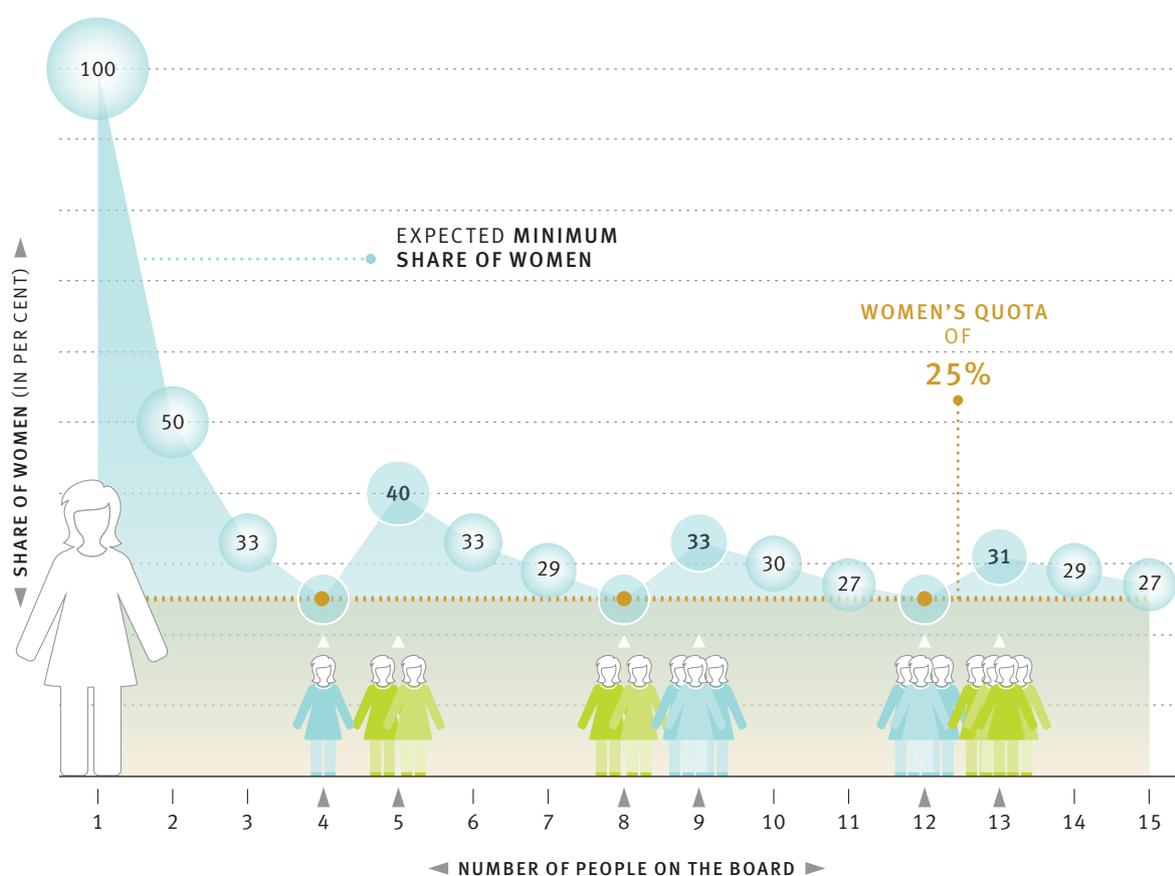
These effects could be identified by virtue of the fact that minimum quotas lead to different gender shares, depending on the size of the board: For example, given a four person board, a quota of 25 per cent is achieved by having at least one woman on the board, but given a five person board, at least two women are required, i.e. a 40 per cent share. Similar, albeit somewhat smaller, rounding effects also occur with eight and nine as well as 12 and 13 person boards (see figure). Earlier studies compared companies with different proportions of women before the introduction of quotas. However, the comparison in these studies is biased if the companies are on different growth paths.

STUDY

“Gender Diversity in Corporate Boards: Evidence from Quota-Implied Discontinuities”

www.zew.de/PU82440-1

NOMINAL AND EFFECTIVE MINIMUM QUOTAS



The dotted line shows a women's quota of 25 per cent, as it applies in Great Britain, for example. With four people on the board, the quota can already be met by one woman, but with five people it can only be met by at least two women. In this case, the effective minimum quota is not 25 per cent, but 40 per cent.

SOURCE: ZEW/NES Moskau



#08

**CORPORATE TAXATION
AND PUBLIC FINANCE**

- TAXATION OF DIGITAL BUSINESS MODELS
- TAX AVOIDANCE BY MULTINATIONAL COMPANIES
- EUROPEAN FISCAL RULES
- TAX AND DEBT PREFERENCES
- PUBLIC PROCUREMENT



HEAD

Prof. Dr. Friedrich Heinemann

DEPUTY HEAD

Dr. Zareh Asatryan,
Prof. Katharina Nicolay

HEAD

JUNIOR RESEARCH GROUP
Public Procurement

Leonardo Maria Giuffrida, PhD

REFORM SUPPORT FOR THE DEBT BRAKE BEFORE AND AFTER THE START OF THE COVID-19 PANDEMIC

- German state politicians desire reform of debt brake.
- Absolute majority supports exceptions for infrastructure spending.

The COVID-19 pandemic has intensified debates concerning the German ceiling on deficit spending, or so-called debt brake. In particular, many argue that the debt brake, which is designed to ensure sustainable budgetary practices, places excessive constraints on necessary future-oriented investment, e.g. for climate protection. In any event, a reform of the debt brake would require a constitutional amendment and thus a two-thirds majority in the German Bundestag and the Bundesrat.

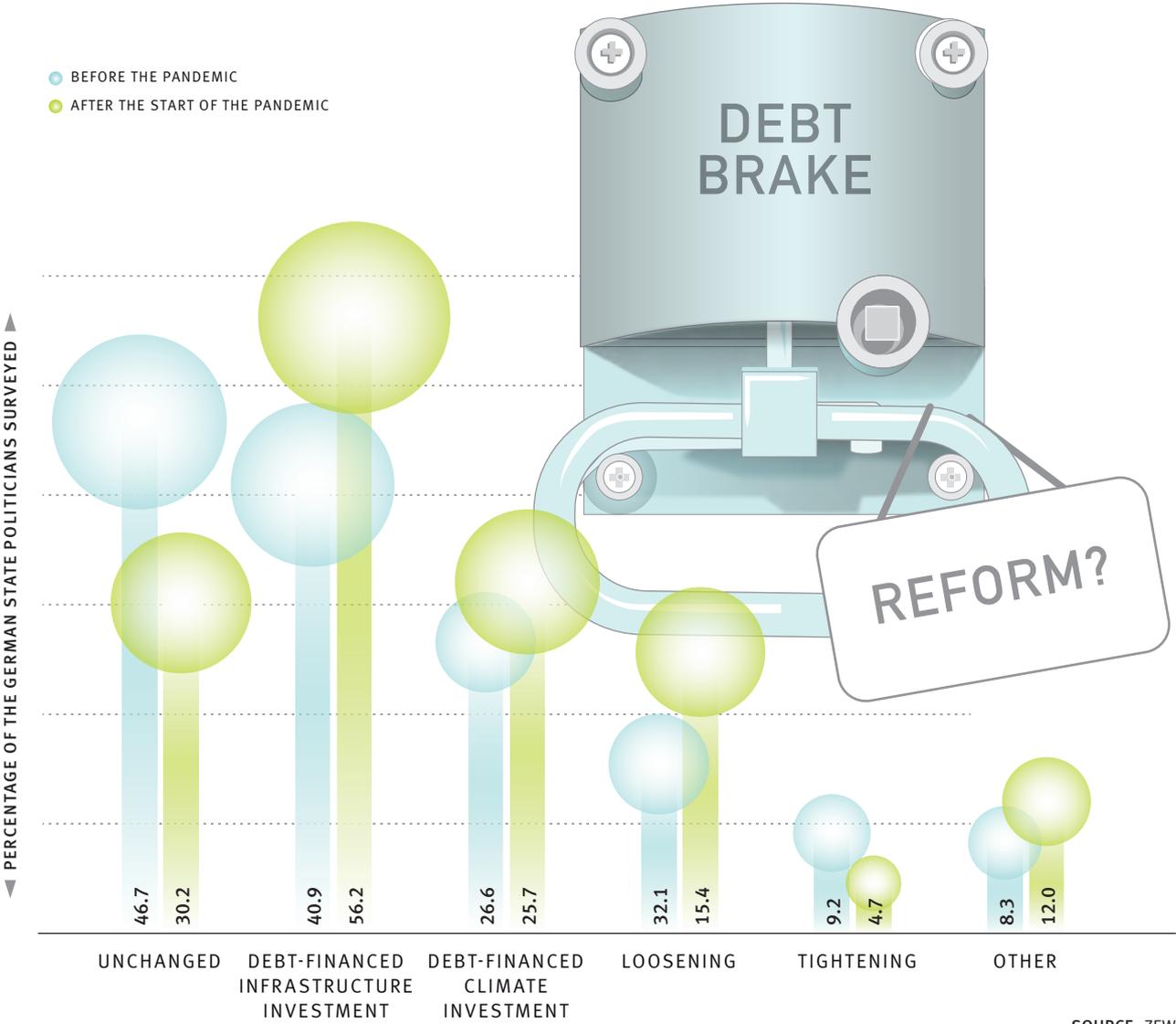
ZEW conducted a study to examine the opinions of policymakers on this issue. Specifically, the researchers carried out a survey of all 16 German state parliaments in 2020. The study shows there is strong support for the reform of the debt brake within German state governments. The study also shed light on the reform proposals most likely to find support in the Bundesrat, Germany's upper house. State MPs were asked to indicate their opinions from two perspectives: first, retrospectively, at the beginning of 2020, before the outbreak of the COVID-19 pandemic, and second, at the time of the survey, which was conducted three months into the pandemic. Although a clear majority would like to return to the debt brake after the crisis, a higher share indicated support for one or more reforms three months into the crisis. In addition, there was also majority support for a special amendment to the debt brake that would allow supplementary debt-financed infrastructure investment. The pandemic also drove greater support for debt-financed climate investment. By contrast, a general loosening of debt rules was only supported by around a quarter of the surveyed politicians, even following the outbreak of the pandemic.

ZEW EXPERT BRIEF

“Landtagspolitiker stehen zur Schuldenbremse bei wachsender Unterstützung für Investitionsklausel”

www.zew.de/PU82268-1

REFORM SUPPORT FOR THE DEBT BRAKE BEFORE AND AFTER THE START OF THE COVID-19 PANDEMIC



SOURCE: ZEW

RULES LIMITING LOSS CARRYOVER IMPAIRS VENTURE CAPITAL FINANCING

- So-called shell company regulations forbid losses from being carried forward when the ownership of a company changes.
- These tax rules discourage VC investment in innovative start-ups.

Losses accumulated in a given financial year do not lead directly to tax refunds. Rather, they can be offset against profits from previous or subsequent years. Regulations governing the purchase of shell companies forbid losses from being carried forward, insofar as there is a significant change in the composition of shareholders. This rule is designed to prevent bankrupt companies from being purchased only for tax optimisation purposes. However, new companies such as pharmaceutical start-ups often accumulate significant losses before they become profitable. If these losses can no longer be offset against future profits, this might deter investors from taking a stake in an otherwise promising company.

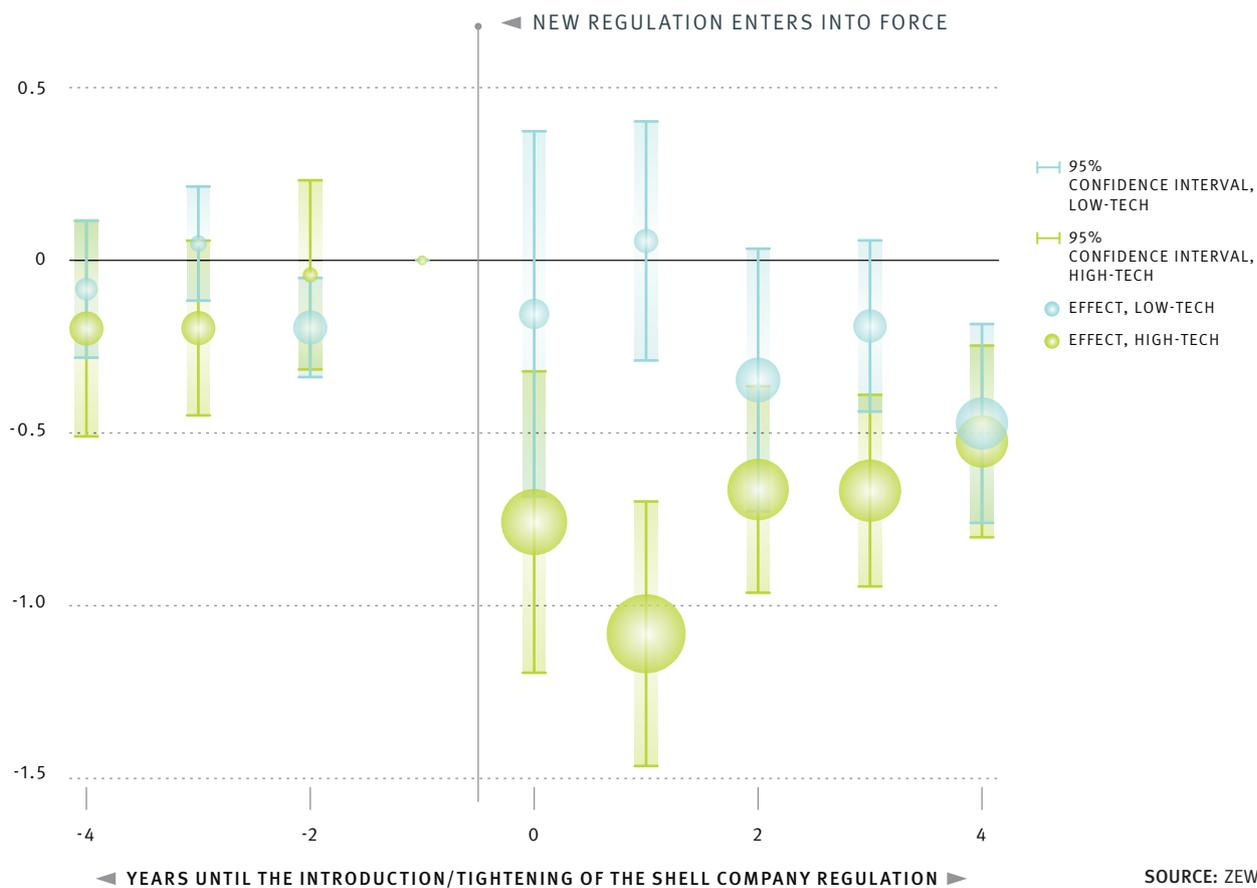
A recent ZEW study investigated whether European start-ups attract less venture capital due to this tax rule. Specifically, the researchers compared VC activity in two sets of countries: countries that introduced or tightened shell company regulations (treatment group) and those in which the rules remained unchanged (control group). The figure illustrates the difference in VC funding between the treatment and control groups. Within groups, the researchers also took a closer look at firms in the low-tech and high-tech sectors. The study revealed that start-ups in affected countries received significantly less funding after shell company regulations were introduced or tightened. Innovative high-tech companies were particularly impacted.

STUDY

“Do Tax Loss Restrictions Distort Venture Capital Funding of Start-Ups?”
www.zew.de/PU82268-1

EFFECTS OF TAX LOSS RESTRICTIONS ON VC FUNDING

VC FUNDING
(LOGARITHMISED)





#09

**HEALTH CARE MARKETS
AND HEALTH POLICY**

- DIGITAL HEALTH
- REMUNERATION SYSTEMS
- HEALTH CARE SYSTEMS
- INDIVIDUAL HEALTH



HEAD

Dr. Simon Reif

MOBILE APPS FOR PATIENT TREATMENT REQUIRE ECONOMIC EVALUATION

- Germany is a pioneer in the market for digital health assistants.
- Health economics research can improve the regulation of this new market.

Since the end of 2020, apps that support treatment can not only be prescribed by doctors, but are also covered by health insurers. This enabling environment for the adoption of health apps is not only unique worldwide, but also offers a tremendous opportunity for the German health care system to achieve better treatment outcomes at lower costs. However, there are still many unanswered questions. On the one hand, it is unclear whether these conditions for market access will really bring about a wave of innovation. On the other hand, application developers and health insurers have different ideas concerning cost-coverage levels and eligibility. Health economics research can help us to better understand and regulate this market.

In current projects, the Research Group “Health Care Markets and Health Policy” has been studying digital health applications and concepts in order to develop recommendations for regulatory reform. The research group is also working with software providers to quantitatively evaluate the benefits provided by such apps.

#ZEWPODCAST

“Apps zur Behandlung
von Erkrankungen”

www.zew.de/PU82547-1

DIGITAL.

HEALTH APPLICATIONS



PHYSICAL AND MENTAL ILLNESSES CAN INFLUENCE PARTNERSHIPS

- ZEW examined the connection between health shocks and likelihood of separation in couples.

A large number of studies have shown that good health is positively related to the likelihood of entering into marriage. However, far less attention has been paid to the question of how changes in health status affect partnerships. ZEW took a closer look at this issue. Couples who participated in several surveys of the Socio-Economic Panel (SOEP) were examined. Their health status was recorded here via twelve questions, which were aggregated into a mental and physical health index. A health shock was defined as a severe deterioration of the indices in one or both partners. Couples who experienced a health shock were each contrasted with couples who were as similar as possible and whose health conditions remained stable.

According to the study, couples who experience a mental health shock separate significantly more often within the following two years than the comparison couples without a health shock. For couples with a physical health shock, the relationship was reversed, albeit very small. The results indicate that particularly when treating mental illness, the patient's significant other should be taken into account.

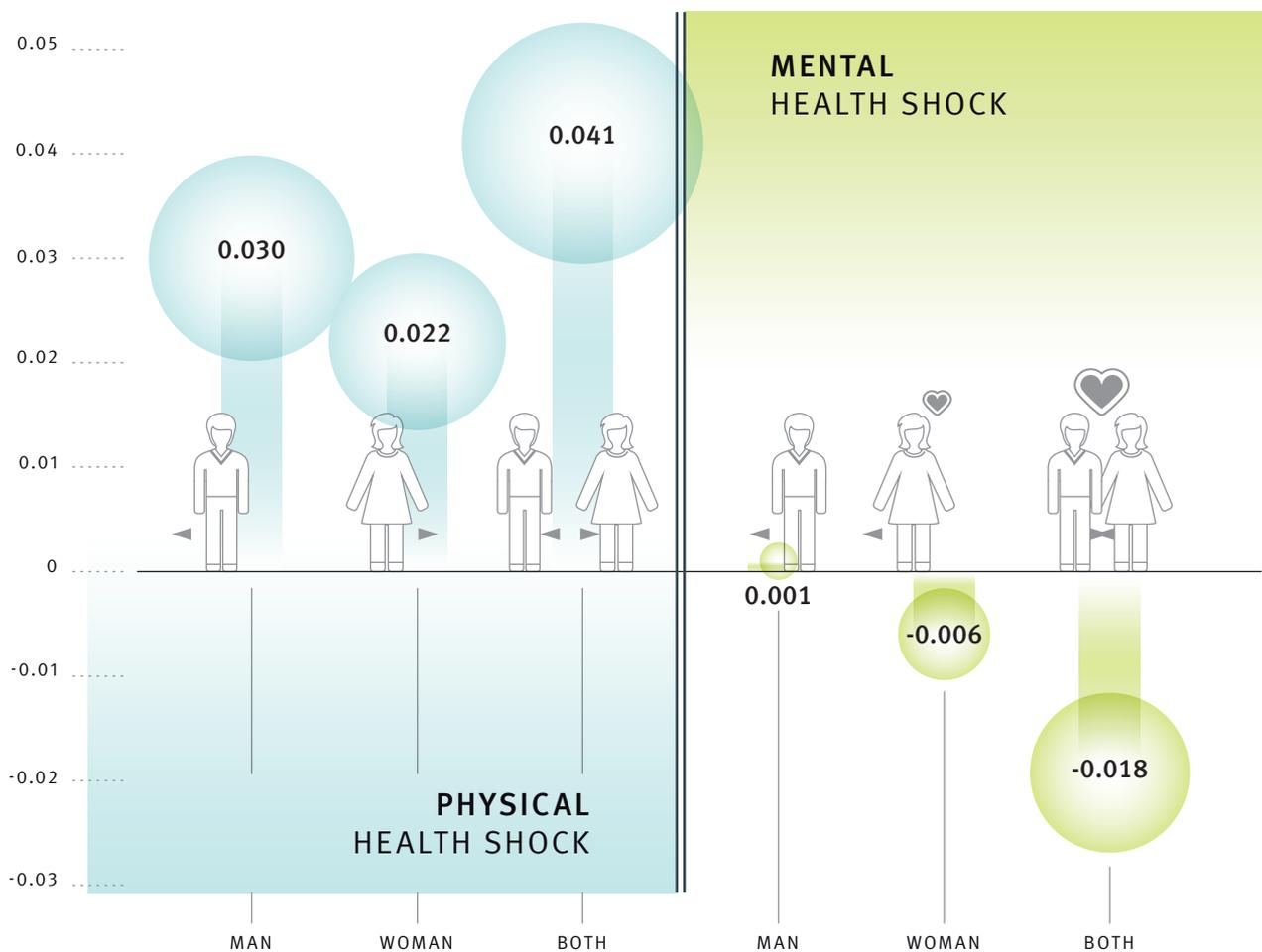
STUDY

"In Sickness and in Health? Health Shocks and Relationship Breakdown: Empirical Evidence from Germany"

www.zew.de/PU82749-1

PROBABILITY OF COUPLES SEPARATING AFTER A MENTAL/PHYSICAL HEALTH SHOCK

CHANGE IN THE PROBABILITY OF SEPARATION (IN PERCENTAGE POINTS)



SOURCE: ZEW



POLICY ADVISING

A proactive role of government is never more important than in times of crisis. Yet for policy-makers to take effective action, they require impartial knowledge and sound empirical insight. This perennial truth underscores the importance of our work as an economic research institute. In the run-up to the 2021 Bundestag elections, ZEW researchers examined a number of the weighty challenges we currently face as a society, offering policy recommendations that aim to improve the efficacy of economic-policy decisions.

THE 2021 GERMAN ELECTIONS

TEN RECOMMENDATIONS FOR ECONOMIC POLICY

The new German government that took office in autumn 2021 must collaborate with its European partners to address a host of pressing issues, from the COVID-19 crisis and energy transition to demographic change and the digital transformation. In the run-up to the federal elections, ZEW President Achim Wambach published ten economic policy recommendations for the new government based on the insights of recent work by ZEW researchers.

1 INDEPENDENT MONITORING OF EU RECOVERY FUNDS

The German government should advocate for the independent monitoring of European recovery spending in order to ensure funds are used for their intended purpose.

2 STRENGTHEN GERMANY AS A BUSINESS LOCATION

Germany should be strengthened as a business location by making tax policy more investment friendly. In contrast to the proposed global minimum tax, VAT is a simple and effective means of simultaneously collecting more taxes and ensuring fair competition. VAT should therefore be extended to digital services.

3 EQUITABLE SHARING OF CO₂ REDUCTION BURDENS

In order to avoid placing excessive burdens on national economies, CO₂ reduction costs should be equitably distributed between economic sectors. Accordingly, existing emissions trading should have a stronger role in CO₂ emissions reduction than previously planned.



TEN RECOMMENDATIONS FOR ECONOMIC POLICY

4 CREATE LOCAL PRICE INCENTIVES IN THE POWER MARKET

To meet the increasing demands being placed on the electricity grid in a forward-looking manner, regulators should enable local pricing and examine the transition to a system based on nodal prices.

5 EXPLOITING THE ENERGY-SAVINGS POTENTIAL OF DIGITALISATION

Digitalisation can increase energy efficiency and thus help to achieve long-term climate goals. However, companies still lack information that could increase their willingness to invest in such technologies. The availability of energy data should be improved in order to exploit the potential of digital technologies to increase energy efficiency.

6 IMPROVE CONDITIONS FOR UNICORNS

The new federal government should improve the market conditions for the growth of highly valued startups by ensuring favourable financing conditions.

7 ENCOURAGE CAREER TRANSITIONS TO GROWTH INDUSTRIES

In order to counteract the shortage of skilled workers, Germany must succeed in enabling workers to retrain for growth industries, such as software development. Government should create programmes that help workers transition to new fields. In addition, high-demand skills in growth industries should be emphasised in vocational training.



THE 2021 GERMAN ELECTIONS

8 MAKING STRUCTURALLY WEAK REGIONS MORE ATTRACTIVE

In order to reduce disparities in living conditions in Germany, structurally weak and rural regions must become more attractive. Important tools in this regard include investment subsidies for regional enterprises and the possibility for municipalities to rely on sources of income other than local business taxes (which can be highly cyclical).

9 REFORM HOSPITAL FUNDING

Germany should modify its current system of hospital funding in order to encourage higher quality care. Market design methods could be used to improve the provisioning of intensive care beds and other hospital capacities. Furthermore, policymakers should consider measuring hospital success not only in terms of the number of procedures performed, but also in terms of the quality of care provided, and to disburse funding accordingly.

10 INTRODUCE STANDARDISED PENSION PRODUCTS

Policymakers should introduce standardised pension products. By promoting market transparency and crowding out more expensive products, this can help to overcome the existing problem of high costs for the insured. Standardised pension products would also be less complicated, and could be designed to ease identification of eligibility.

*www.zew.
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NOTE: A comprehensive overview of the scientific output and networking activities of ZEW in 2021 can be found (in German only) at: www.zew.de/dokujahresbericht21

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