



**ZEW**

**ANNUAL REPORT 2024**

*Leibniz*  
Leibniz  
Association



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**PROF. ACHIM  
WAMBACH, PHD**

» PRESIDENT

**CLAUDIA VON  
SCHUTTENBACH**

» MANAGING DIRECTOR

# DEAR READERS,

2024 was a challenging year for actors in politics, business, and civil society. Against the backdrop of a turbulent international scene marked by Donald Trump's re-election and ongoing conflict in Ukraine and the Middle East, Germany's "traffic-light" coalition collapsed and the economy was stagnating. At ZEW, we closely followed these dynamic developments, conducting evidence-based research to disclose their political and economic implications. We also sought to bolster the strength of policy decisions by distilling robust and actionable insights from our research findings. Accordingly, the overarching theme of this year's annual report is STRENGTH.

This dossier shows how our rigorous empirical research contributes to meeting the macroeconomic challenges of our day. We provide economic assessments of industrial policy; deliver valuable insights for further development of sustainable tax and fiscal policy and offer new perspectives on the future-oriented transformation of the economy and society. As part of our commitment to the dissemination of our research findings, we hosted various recurring events in 2024, including our Lunch Debates in Brussels – which explored EU cohesion policy, among other topics – as well as our lecture series "First-Hand Information on Economic Policy", which addressed topics such as the energy transition. Over the course of last year, we also actively shaped the discourse on sustainable fiscal policy by engaging in dialogue with influential policymakers, economists, and corporate leaders. At ZEW, we believe informed dialogue is the key to effective policy decisions. Yet informed dialogue can only take place on the foundation of first-class research. Among the various research projects undertaken in 2024, we carried out a pilot study, funded with € 1.1 million euros, for the Federal Min-

istry of Labour and Social Affairs to explore the connection between innovation and the labour market. In the "MetaFin" project, which is conducted on behalf of the Federal Ministry of Education and Research, we have also been studying the benefits of financial education – a particularly salient topic given the increasing pressures on the public pension system. The ZEW team registered various personal achievements in 2024. In a testament to the importance of economic perspectives for major societal debates, ZEW President Professor Achim Wambach, PhD was appointed to the German Ethics Council. Additional notable achievements include Professor Zareh Asatryan's appointment to a professorship at the University of Münster, and Professor Philipp Böing's acceptance of a teaching position at the University in Frankfurt. Last year also saw an important change to ZEW's management team. Claudia von Schuttenbach, who has considerable expertise in the management of academic institutions, took the reins as Managing Director in March of 2024. She replaced Thomas Kohl, who shaped ZEW's development with remarkable dedication and success for over thirty years. To be sure, 2024 was a tumultuous year. Yet we look to the future with optimism, confident in the STRENGTH of ZEW. We hope you enjoy reading this dossier – and that you draw inspiration from our activities at the intersection of research, politics, and society.

BEST REGARDS,



ACHIM WAMBACH



CLAUDIA VON SCHUTTENBACH

# MISSION

Independent and well-founded economic research with policy relevance – that's what ZEW stands for. The institute's topics are closely linked to current events.

Politically and socially relevant issues such as

- **DIGITALISATION**
- **EUROPEAN INTEGRATION**
- **ENERGY TRANSITION**

shape our research agenda as cross-cutting themes. ZEW advises political decision-makers in key positions in these fields, among others, and actively contributes to public debates.

ZEW pursues two central goals with its work:

- **POLITICALLY RELEVANT RESEARCH**
- **SCIENTIFICALLY BASED POLICY ADVICE**

# ABOUT US

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.

Our aim is to conduct research for the benefit of society, focusing on application-related issues. ZEW's guiding principle is to **study and help design well-performing markets and institutions** in Europe. Specifically, we deal with how the framework conditions of market processes must be shaped to enable sustainable and efficient economic development of the European economies. Providing evidence-based policy advice is another key objective for ZEW. 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 President Professor Achim Wambach and Managing Director Claudia von Schuttenbach (since 1 March 2024; until 29 February 2024, Thomas Kohl was the managing director), ZEW currently employs some 180 people spread out across nine research units, three junior research groups and two service units.



180

EMPLOYEES



9

RESEARCH  
UNITS



3

JUNIOR  
RESEARCH  
GROUPS

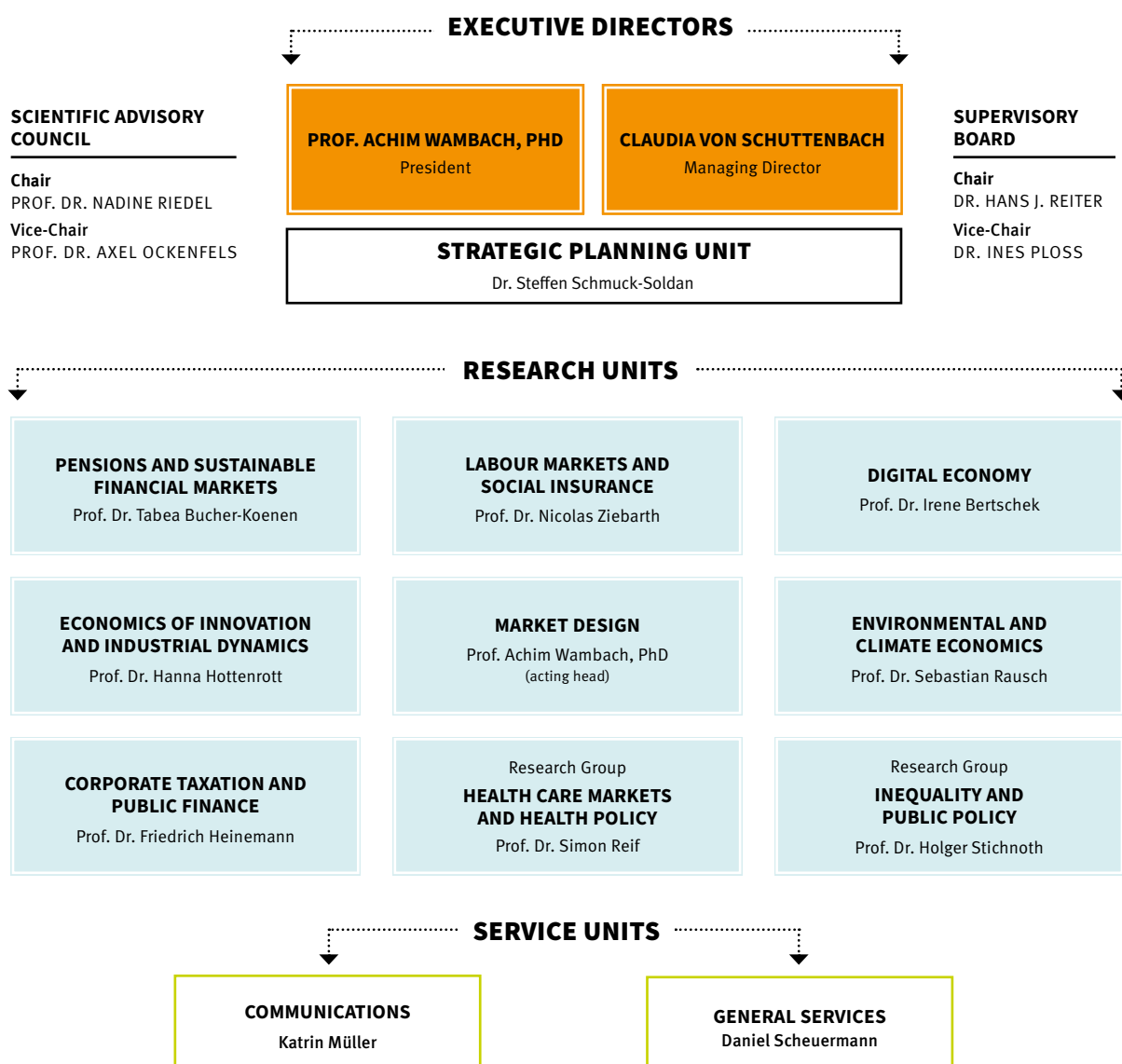


2

SERVICE  
UNITS

# ORGANISATION CHART

AS OF APRIL 2025





# COMMITTEES

AS OF APRIL 2025

## SUPERVISORY BOARD

### CHAIR

**DR. HANS J. REITER**

Ministry of Science, Research and Arts  
Baden-Württemberg

### VICE-CHAIR

**DR. INES PLOSS**

Heidelberg Materials Mineralik DE GmbH

**VERENA AMANN**

MVV Energie AG

**DR. ELGA BARTSCH**

Federal Ministry for Economic Affairs  
and Climate Action

**HEIKO ENGLING**

Ministry of Finance of the State of  
Baden-Württemberg

**PROF. DR. THOMAS FETZER**

University of Mannheim

**DR. NATALIA JAEKEL**

State Ministry of Baden-Württemberg

**MICHAEL KLEINER**

Ministry for Economic Affairs, Labour  
and Tourism Baden-Württemberg

**PROF. DR. INGRID OTT**

KIT – Karlsruhe Institute for Technology

**DR. ALBRECHT SCHÜTTE**

MdL Baden-Württemberg

**PROF. DR. PETER WINKER**

Giessen University

## SCIENTIFIC ADVISORY COUNCIL

### CHAIR

**PROF. DR. NADINE RIEDEL**

University of Münster

### VICE-CHAIR

**PROF. DR. AXEL OCKENFELS**

Max Planck Institute for the Study of  
Commonalities, Bonn

**PROF. DR. ÖZLEM BEDRE DEFOLIE**

European University Institute (EUI), Florence, IT

**PROF. DR. JAKOB DE HAAN**

University of Groningen, NL

**PROF. DR. OTTMAR EDENHOFER**

Potsdam Institute for Climate Impact Research

**PROF. BERND FITZENBERGER, PHD**

Institute for Employment Research of the German  
Federal Employment Agency, Nuremberg

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Max Planck Institute for Innovation and  
Competition, Munich

**PROF. JÖRG ROCHOLL, PHD**

European School of Management and Technology  
(ESMT), Berlin

**PROF. DR. DR. H.C. MONIKA SCHNITZER**

Ludwig Maximilian University of Munich

**PROF. DR. LEONIE SUNDMACHER**

Technical University of Munich

**PROF. MASSIMO TAVONI, PHD**

European Institute on Economics and the  
Environment (EIEE), Milan, IT

# 2024 IN NUMBERS

SCIENTIFIC OUTPUT AND POLICY ADVICE

 **538**  
PRESENTATIONS AT CONFERENCES

 **61**  
TEACHING ACTIVITIES

 **234**  
REFeree REPORTS

 **76**  
ARTICLES IN PEER-  
REVIEWED JOURNALS

 **168**  
RESEARCH PROJECTS

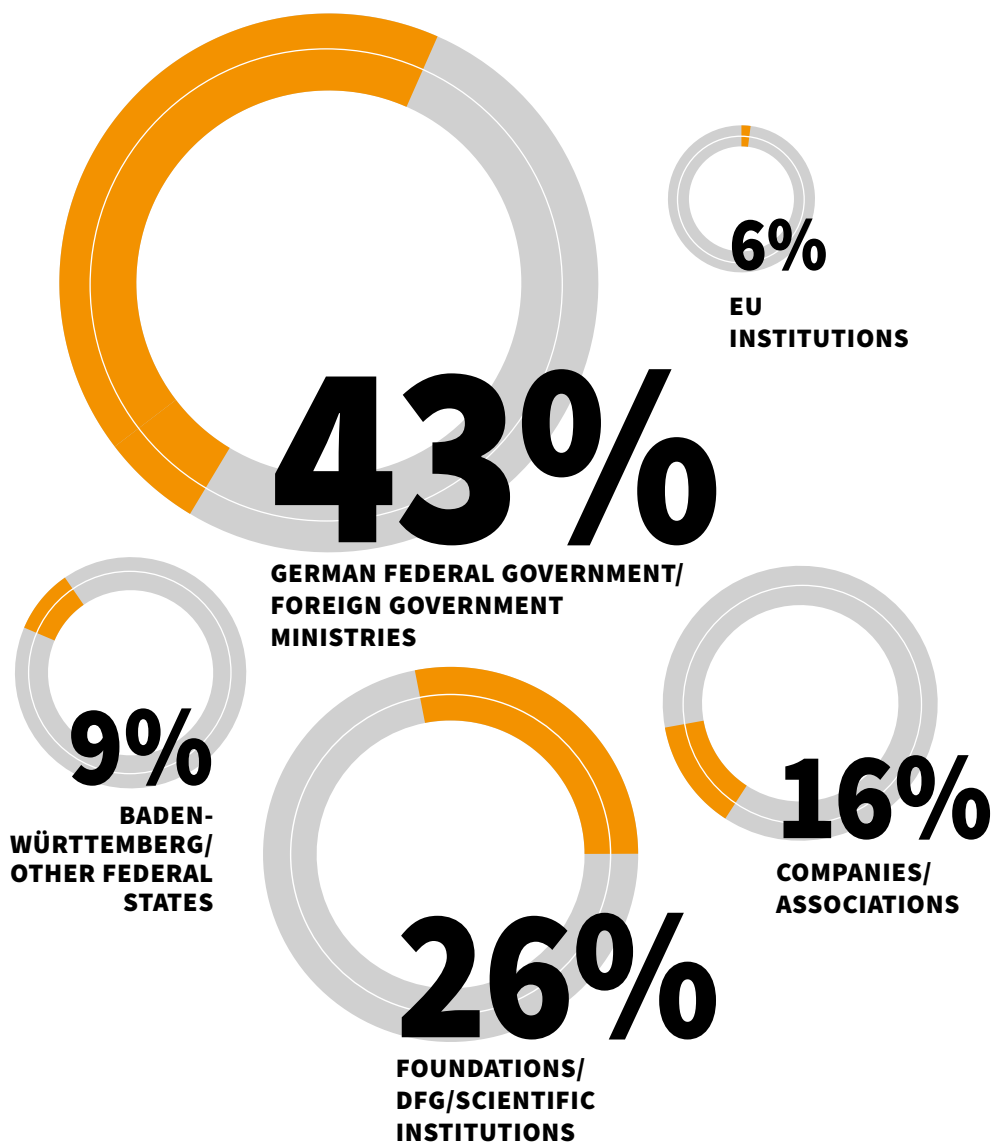
 **52**  
CONFERENCES/  
WORKSHOPS

 **19**  
PRIZES/AWARDS



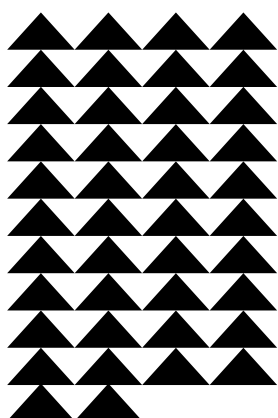
# THIRD-PARTY FUNDING IN 2024

SOURCES OF FUNDING

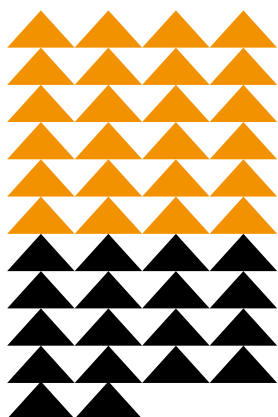


# PERSONNEL

AS OF DECEMBER 2024



**183**  
EMPLOYEES  
IN TOTAL



FEMALE EMPLOYEES  
**46.8%**



**111**  
RESEARCHERS



**34**  
RESEARCHERS  
EMPLOYED ON A  
PART-TIME BASIS



**28**  
INTERNATIONAL  
RESEARCHERS



**6.0**  
AVERAGE NUMBER  
OF YEARS  
RESEARCHERS  
ARE AT ZEW



**69**  
STUDENT  
RESEARCH  
ASSISTANTS



**23**  
INTERNS  
(CUMULATIVE  
FOR 2024)



**72**  
RESEARCH  
SUPPORT  
STAFF



**35.4**  
AVERAGE  
AGE OF ZEW  
RESEARCHERS



**6**  
DOCTORAL  
GRADUATIONS

# FINANCES

AS OF APRIL 2025

## EXCERPT FROM THE PROFIT AND LOSS STATEMENT

	2023	2024*
Institutional funds	12,872	13,400
Third-party funds (turnover, inventory changes, subsidies)	6,805	7,296
Income from the reversal of the special item for contributions to fixed assets	547	455
Other revenues	292	333
<b>TOTAL REVENUES</b>	<b>20,516</b>	<b>21,484</b>
Staff expenditures	14,177	14,256
Third-party services	1,299	1,762
Other operating expenditures	5,068	4,659
Asset write-offs	539	450
Allocation to special items for contributions to fixed assets	127	110
Other	24	20
<b>TOTAL EXPENSES</b>	<b>21,234</b>	<b>21,257</b>
<b>PROFIT/LOSS FOR THE FINANCIAL YEAR</b>	<b>-718</b>	<b>227</b>
Withdrawals from appropriated reserves	736	529
<b>NET INCOME</b>	<b>18</b>	<b>756</b>

## ZEW BALANCE SHEET AS OF 31 DECEMBER 2024\*

ASSETS	2023	2024*	LIABILITIES AND EQUITY	2023	2024*
Intangible assets	225	141	Share capital	26	26
Real estate and buildings	7,295	7,116	Appropriated reserves	2,012	1,501
Equipment	355	274	Other reserves	2,169	2,169
<b>Fixed assets</b>	<b>7,875</b>	<b>7,531</b>	Net income	18	756
Stocks	2,618	3,945	Shareholder's equity	4,225	4,452
Receivables/other assets	875	913	Untaxed reserves	4,245	4,549
Cash at banks	4,387	4,060	Reserves	2,004	1,851
<b>Current assets</b>	<b>7,880</b>	<b>8,918</b>	Advances received	2,597	3,767
Prepaid expenses	542	431	Liabilities to banks	1,464	817
			Other liabilities	1,762	1,444
			<b>Outside capital</b>	<b>7,827</b>	<b>7,879</b>
<b>TOTAL</b>	<b>16,297</b>	<b>16,880</b>	<b>TOTAL</b>	<b>16,297</b>	<b>16,880</b>

\* PRELIMINARY FIGURES IN K EUROS

# EVENTS

IN THE YEAR 2024

ZEW events provide an opportunity for guests interested in current economic policy issues to inform themselves and enter into exchange with key actors in politics, business and academia. Whether talks by renowned decision-makers or discussions on new research findings of ZEW – our events provide valuable impetus and promote active dialogue. ZEW events take place in Mannheim, Stuttgart or Brussels, and we also organise online events.

## ANNIVERSARY

Andrea Nahles, Chair of the Executive Board of the German Federal Employment Agency, and the Who's Who of German economic sciences are congratulating Prof. Dr. Dr. h.c. mult. Wolfgang Franz, ZEW president from 1997 to 2013, on his 80th birthday.



## FIRST-HAND INFORMATION ON ECONOMIC POLICY

Dr. Leonhard Birnbaum, CEO of E.ON, is giving a talk and discussing with ZEW President Professor Achim Wambach, PhD at an event in Mannheim organised in the series "First-Hand Information on Economic Policy".



## ➤ INSTRUCTIVE. INTENSIVE. INSIGHTFUL.

➤ MORE INFORMATION  
ON PUBLIC EVENTS

[WWW.ZEW.DE/WS58](http://WWW.ZEW.DE/WS58)



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## ZEW LUNCH DEBATE

In Brussels, Dr. Dominik Rehse is discussing with European experts and professionals about the EU's Artificial Intelligence Act.



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## POLICY ADVICE

Claudia von Schuttenbach and Professor Friedrich Heinemann are presenting a ZEW study on EU cohesion policy conducted on behalf of the German Federal Ministry of Finance to German Finance Minister Christian Lindner in Brussels.



# PASSING OF THE BATON

CHANGE IN THE COMMERCIAL MANAGEMENT OF ZEW

**THOMAS KOHL SHAPED ZEW'S DEVELOPMENT WITH COMPETENCE, DEDICATION AND SUCCESS FOR OVER 30 YEARS, INCLUDING 24 YEARS AS MANAGING DIRECTOR. IN MARCH 2024, HE WAS SUCCEEDED BY CLAUDIA VON SCHUTTENBACH. NEW STRENGTH FOR ZEW.**

ZEW held a farewell ceremony to honour Thomas Kohl for his decades of service, during which he played a key role in shaping the institute with his commercial expertise and strategic vision. Under his commercial management, ZEW grew into an internationally recognised research institution. Colleagues from academia, politics, business and society came together to thank him for his extraordinary commitment and to welcome Claudia von Schuttenbach to ZEW.



Thomas Kohl, former managing director of ZEW, is passing the baton to Claudia von Schuttenbach.

**➤ NEW STRENGTH FOR ZEW.**





Dr. Ralph Rheinboldt (chairman of the ZEW Sponsors' Association); Prof. Achim Wambach, PhD; Thomas Kohl; Claudia von Schuttenbach; Dr. Hans J. Reiter (chairman of the ZEW Supervisory Board) and Prof. Dr. Dr. h. c. Clemens Fuest (president of the ifo Institute and former ZEW president from 2013 to 2016) (from left to right).



Dr. Hans J. Reiter, ZEW Supervisory Board chairman, is speaking at the ceremony and honouring the achievements of Thomas Kohl.



The ZEW singing group provides musical backing for the get-together afterwards.

ESSAY BY CLAUDIA VON SCHUTTENBACH

# STABILITY, INNOVATION AND FORESIGHT – PAVING THE WAY TO ZEW'S FUTURE

## ASSURING EXCELLENCE IN RESEARCH, DESPITE CHALLENGING CONDITIONS FOR OUR WORK

Our researchers provide evidence-based insights of practical relevance for the scientific community, policymakers, business leaders and civil-society actors – a service that is of particular value in uncertain times. But maintaining excellence in research is not always easy. We have been confronted with difficult managerial decisions in recent months due to broader societal trends in combination with rising personnel and material costs, which have outstripped our institutional funding. When I was appointed Managing Director one year ago, I assumed responsibility for ensuring that our institute – which recently received an outstanding evaluation by the Leibniz Association – remains well positioned for the future, despite the mounting financial pressures of recent years.

We are certainly not alone in the research landscape when it comes to challenging financial conditions. Nevertheless, there was a clear need to assess ZEW with fresh eyes – not just with a view to the organisation and activities of our internal service units, but also with regard to our research units. While it was necessary to cut costs, we also wanted to preserve

our ability to grow and innovate. Working together, we were able to find solutions that will entail sacrifices, but which will also provide freedom of action to grow and explore new directions in research.

In this process, I was particularly impressed by the collective dedication to transparency, the constructive discussions on equal footing between all personnel, and the pronounced willingness to find solutions. All participants demonstrated a strong commitment to securing ZEW's financial stability while also positioning it to conduct cutting-edge research in the future.

## ➤ EXTERNAL IMPACT DEPENDS ON INTERNAL STRENGTH

The strength of our institute is the key determinant of the impact made by research, advising, and outreach activities. Accordingly, we are always working to explore new directions in research and further develop the institute. By way of example, we are expanding our research

group dedicated to human health. We have also been breaking new ground in “knowledge transfer” – that is, in the dissemination of our research findings to experts and the broader public. Our Policy Initiative projects, which are being implemented in cooperation with the ZEW Sponsors’ Association, are one prominent example in this regard. These projects are important because they are building additional bridges between researchers, policymakers and civil-society actors. In my role as Managing Director, I am responsible for maintaining a close and constructive dialogue with our stakeholders in politics, academia, and business, not only to support the sharing of our research findings, but also to advocate for the needs of our institution and – no less importantly – to bring valuable perspectives shared by our friends and partners back to ZEW.

This dialogue has proven its worth on many counts. For example, our input helped to shape the state of Baden-Württemberg’s regulations for academic appointments. Under the new rules, we can continue to fill professorships in partnership with renowned universities, not least by taking advantage of our excellent contacts. This means our researchers can pursue particularly promising career paths and we are in the position to attract top talent. Our ability to influence current societal debates is attributable in no small part to the flexibility of our internal organisational structures. Digital transformation is a crucial lever in this regard. Our revised digitalisation strategy has significantly improved the efficiency of our working processes, thanks to the adoption of digital signatures and new workflows. The virtualisation of our servers, planned roll-out of Microsoft 365 and our increased focus on cyber security are all placing us on sound

footing for the future. The adoption of AI tools across all research and service units is the next big digital transformation task at ZEW – and we are already making progress at various levels towards this goal.

The further development of ZEW’s physical plant also has high priority. The ZEW building provides an architecturally inviting forum for conferences, political discussions, international meetings and our high-publicity events. Beyond regular maintenance, we are continuously investing in the further development of the ZEW building – not just to ensure the property retains its value, but also to expand our capabilities as a centre for research and knowledge exchange.

However, the true lifeblood of ZEW remains our employees. Last year, we implemented the first elements of a new personnel development strategy. Looking forward, we will be devoting even greater attention to identifying career paths within and outside academia for young and gifted researchers; to collaborating closely with our sponsors and alumni; to developing new formats and onboarding processes; and to expanding our national and international ties.

## ➤ CUTTING-EDGE RESEARCH REQUIRES RELIABLE FUNDING

Government would be well served to heed the needs of research institutes. Resource constraints should not be allowed to undermine the quality of research or associated outreach. For my part, I am dedicated to ensuring ZEW remains an adaptable and innovative centre of excellence in research. And I am looking



# STRENGTHENED FOR THE FUTURE.

ZEW's new Managing Director Claudia von Schuttenbach is a seasoned academic manager. As the former chancellor of Hochschule Mannheim, she has extensive expertise in financial and administrative management as well as in the strategic development of scientific institutions. Using this wealth of experience, she is committed to further consolidating the institute's position in a changing research environment, driving innovation and creating optimal conditions for excellent economic research. With her leadership skills, her visionary abilities and her dedication, Claudia von Schuttenbach strengthens ZEW's ability to set standards also in the future – nationally and internationally.



**CLAUDIA VON  
SCHUTTENBACH**

» **MANAGING DIRECTOR**

[WWW.ZEW.DE/TEAM/CVS](http://WWW.ZEW.DE/TEAM/CVS)





A full-length portrait of Prof. Achim Wambach, PhD, standing in a modern, minimalist interior space with a curved concrete ceiling and a dark baseboard. He is wearing a dark suit, a white shirt, and a striped tie, and is smiling at the camera. A large white arrow is painted on the floor behind him.

## INTERVIEW ON THE TOPIC OF STRENGTH.

Prof. Achim Wambach, PhD has been the president of ZEW since April 2016 and is Professor of Economics at the University of Mannheim. At his initiation, the “Market Design” Research Unit and the “Health Care Markets and Health Policy” Research Group were set up at ZEW. He also launched the joint doctoral programme with the University of Mannheim. He was a member of the Monopolies Commission from 2014 to June 2022 and served as its chair from 2016 to September 2020. He was chairman of the Verein für Socialpolitik (German Economic Association) for the 2017/2018 term of office. He is also a member of the Academic Advisory Board of the Federal Ministry for Economic Affairs and Climate Action, which he chaired from 2012 to 2015. In 2024, Achim Wambach was appointed to the German Ethics Council.

**PROF. ACHIM  
WAMBACH, PHD**

➤ ZEW-PRESIDENT

[WWW.ZEW.DE/TEAM/AWH](http://WWW.ZEW.DE/TEAM/AWH)



INTERVIEW WITH  
ZEW PRESIDENT PROF. ACHIM WAMBACH, PHD

## Q&A ON THE TOPIC OF **STRENGTH**

### **What challenges are particularly testing the STRENGTH of Germany's economic and political leaders?**

Current economic conditions are poor, as confirmed by various surveys of business sentiment, including those conducted by ZEW. However, sluggish domestic growth is far from being the sole problem: geopolitical pressures and tensions are mounting; demographic change is becoming increasingly pronounced; and there is an enormous need for investment into the energy transition. The current situation is thus somewhat unprecedented. When it comes to political decision-making, we should recall the famous line from Clinton's 1992 presidential campaign: "It's the economy, stupid."

### **How can we mobilise the STRENGTH required to adopt forward-looking policy that ensures a sustainable future – without jeopardising economic growth?**

This wording of this question reveals the very nature of the problem: Rather than focus on adopting policy without adverse effects for growth, we should focus on policy specifically designed to boost growth. Germany should

re-dedicate itself to its existing strengths: namely, on its ability to conduct cutting-edge R&D, while placing a stronger focus on disruptive innovation with targeted incentives. Increased defence spending may present opportunities in this regard, for many innovations come from the defence sector. Domestic business conditions also need to be improved, as Germany's international competitiveness is being impaired by excessive red tape, a shortage of skilled workers, sluggish digital transformation, and the underfunding of public infrastructure. To be sure, many of these issues can only be solved at the European level. Accordingly, the momentum for change must come from Europe's capitals.

### **How can economic policy research such as that conducted by ZEW bolster the STRENGTH of political and economic decisions?**

Our research can deliver an impetus for innovation – and supply an empirical foundation for decision-making. One such impetus is furnished by our Zukunftsquote, a metric for the share of public expenditure dedicated to long-term policy objectives. Our data analyses have

been used in a variety of ways – for example, to calculate subsidy disbursements during the energy crisis, and to estimate how the supplementary child benefit reform has impacted the labour supply. We also evaluate policy measures after their implementation. Currently, for example, we are assessing COVID-era economic stimulus programmes. Our findings are helping to improve future policymaking. We take advantage of numerous science communication channels, circulating our insights as part of assessment reports, lectures, presentations and committee memberships; ZEW is represented on the Expert Commission for Research and Innovation, the Scientific Advisory Board to the Federal Ministry of Economics, the German Ethics Council and the Chancellor's Council for the Future.

**How important is the “STRENGTH of collaboration”, both national and international, for ZEW's work?**

Economic research invariably has an important international dimension. And at the Centre for European Economic Research, we think and work with a strong European focus. Last year, while visiting partner institutions in Paris, Rome and Madrid, I was struck by the degree to which our partners are aware of current developments in Germany. It would certainly benefit the dia-

## ➤ IT IS WORTH PUTTING ENERGY INTO THE *TRANSFER.*

logue in Germany if we were to give greater attention to our EU neighbours and their domestic scenes, for we would be sure to learn many things.

**What sources of STRENGTH do you rely on as president to shape the agenda in research and policy?**

It is a great privilege to work at an institute that is consistently being refreshed by young researchers who bring new ideas, new research methods and new points of view. Another helpful factor is the congenial working atmosphere that prevails throughout ZEW. I look forward to my work each day; this is a major asset. I also draw strength and inspiration from the many political discussions in which I participate – whether in Stuttgart, Berlin or Brussels. This helps one to get a better grasp of real-world problems – and it's reassuring to see how local stakeholders welcome our expertise in economics. Investing in research is of course crucial. Yet it is also important to invest in the dissemination of research findings.

**WORDS OF WISDOM FROM A RHINELANDER:  
WHEN THE GOING GETS TOUGH, SERENITY  
IS AN IMPORTANT SOURCE OF STRENGTH.**



# ➤ ENSURING TOMORROW'S *LABOUR MARKET* REMAINS A SOURCE OF STRENGTH

Empirical research is at its best when it illuminates societal challenges and identifies effective solutions. At ZEW, we study developments in the German labour market – and highlight policy measures and targeted strategies that will help to ensure its long-term resilience and strength. Demographic ageing, a shortage of skilled workers and structural change are all placing considerable pressures on the labour market. At the same time, technology is changing the skills and qualifications required by firms. Our research shows that institutional reforms should be designed to ensure that educational outcomes are aligned with the needs of the labour market. In this connection, closer collaboration between educational institutions, labour market actors and the private sector can facilitate career entry while also strengthening the economy.

Social mobility is essential for a robust national innovation system. Within the research area of “Education, Migration and Social Mobility”, we show how education enables upward mobility. The reduction of educational barriers boosts growth and encourages innovation – while also creating opportunities for disadvantaged groups. With our evidence-based research we are providing impulses for a strong, resilient labour market.



**SARAH MCNAMARA &  
JÉRÉMY HERVELIN, PHD**

» RESEARCHERS IN THE  
ZEW RESEARCH UNIT  
LABOUR MARKETS AND  
SOCIAL SECURITY



# ➤ **STRENGTH IN RESEARCH COMMUNICATION**

Research communication can be highly impactful, for it allows complex interrelationships to be communicated to audiences in an understandable way. As ZEW press officers, we know that when empirical findings are communicated effectively, they have the strength to catalyse change. Our task is to present research in an entertaining and accessible manner, for consumption by experts and the broader public alike. In this endeavour, language is our most powerful tool. It helps us to communicate the results of our work precisely, as well as to clearly emphasise the relevance of our research. Effective outreach necessitates clear messaging across all media formats – from press releases and interviews to academic publications. In this way, our outreach activities not only inform audiences, but also capture their attention and earn their trust. By disseminating clearly written and coherently structured texts we ensure that ZEW's insights are heard and understood. Our communication activities thus support the practical application of research findings throughout society, augmenting the impact they make over the long term.

**PASCAL AUSÄDERER,  
FABIAN OPPEL &  
BASTIAN THÜNE**

**» PRESS OFFICERS**



# ➤ DELIVERING INSIGHTS FOR SUSTAINABLE *MOBILITY*

We conduct research at the intersection of environmental and transport economics in order to develop solutions that enable a climate-friendly future. Transport is responsible for 22 per cent of German GHG emissions – a figure that underscores the crucial need to decarbonise this sector. Our research shows how economic incentives influence mobility behaviour and also highlights the policy measures that can be adopted to accelerate the transition to sustainable mobility. By way of example, in a recent study on how the operation of plug-in hybrid vehicles (PHEVs) responds to changes in fuel prices, we show that higher prices at the pump lead to increased electricity-only operation. This empirical finding means that price signals can encourage an ecologically more efficient operation of PHEVs. However, consumer preferences are not the only factor influencing mobility behaviour; the transport industry as a whole is undergoing far-reaching change. Our analyses of air-taxi services and the sustainability of air travel show how innovation and regulation can reduce aviation emissions. Our research delivers an empirical foundation for the development of effective policy measures. More broadly, it also enables consumers, firms and legislators to make informed decisions and actively contribute to the mobility transition. In this way, our research is a driving force for a sustainable future.



**DR. ANNA STRAUBINGER &  
EUNSEONG PARK**

» RESEARCHERS IN THE  
ZEW RESEARCH UNIT  
ENVIRONMENTAL AND  
CLIMATE ECONOMICS



# ➤ **FINANCIAL STRENGTH FOR EXCELLENCE IN RESEARCH**

With cost and activity accounting that encompasses precise budget planning, efficient allocation procedures and rigorous analysis, we furnish the financial foundation for ground-breaking research. To be sure, high-end research requires a sound financial basis. We ensure that research projects are optimally supported – from their initial conception to final realisation – with forward-looking budgeting and allocation decisions. Yet our work involves more than crunching numbers: In addition to granting our researchers freedom of action for personal initiative, our department strengthens the financial resilience of ZEW, thus supporting research quality over the long term. With transparency and efficiency as guiding principles in our work, we provide the preconditions for excellence in research and policy advising at ZEW. In 2024, we refined our financial planning by incorporating KPI-driven rolling forecasts. This has improved both the empirical rigour and adaptability of our financial planning. Our forecasts are now dynamically updated, enabling more precise resource allocation and streamlined research management. Our recent implementation of dynamic global budgets is another noteworthy project. Funding allocation under this system involves the authorisation of lump sums. This allows funding to be efficiently reallocated between research units, based on their needs.

**QIHUA YU &  
DANIEL SCHEUERMANN**

» **SERVICE UNIT  
CENTRAL SERVICES**



➤ **FINANCIAL  
& ECONOMIC  
STRENGTH**

➤ **STRENGTH  
FOR THE  
LABOUR  
MARKET**

➤ **STRENGTH  
FOR THE  
FUTURE**



**DOSSIER**  
**STRENGTH**



# **FINANCIAL & ECONOMIC *STRENGTH***

GUEST ARTICLE BY PROFESSOR FRIEDRICH HEINEMANN  
AND PROFESSOR ACHIM WAMBACH, PHD

# RELIABLE *FISCAL RULES* BECOMING INCREASINGLY IMPORTANT

European and national debt rules are coming under fire in the current discourse. In view of the challenges posed by climate change, demographics and defence, it seems astounding that politicians are imposing restrictions on themselves. Why do we not just free ourselves from the chains of the debt brake and the European Stability and Growth Pact (SGP) and use debt to finance our future? As plausible as this anti-fiscal rule mindset may seem, it is ultimately not very convincing. This is because it is fundamentally based on the fallacy that a debt rule creates an artificial limit where there would otherwise be none. This is not true, however, because no country has an unlimited debt capacity. One of the crucial functions of a country's debt rule is to ensure that it does not move too close to the maximum level of debt that can be finan-

ced, as this would lead to a loss of any room for manoeuvre or be the catalyst for an extremely costly debt crisis. The maximum debt limit is primarily determined by the ratio between the real economic growth rate attainable in the future ("**g**") and the long-term real interest rate ("**r**"). The variable **g** gives an indication of how the ability to levy taxes develops over time. The variable **r** is instrumental in determining the interest burden on government debt. A line can be drawn between two systems here. If the interest rate is lower than the growth rate (**r** < **g**), then a country can let time run its course to grow its way out of any debt rate, no matter how high. In this configuration, the increase in economic output and revenue would relieve the burden on the state at a higher rate than the interest rate for the old debt would burden the state. In this





**ZEW PRESIDENT**  
**PROF. ACHIM WAMBACH, PHD**

case, it would even be possible to experience a permanently high deficit without the debt level rising uncontrollably relative to the economic situation. A completely different situation emerges when the interest rate is higher than the growth rate ( $r > g$ ). Then, there is no permanent leeway for the deficit if you do not want the debt to get out of control. This is because the level of outstanding debt with its accompanying interest would grow continuously in relation to

➤ **THIS ARTICLE WAS  
PUBLISHED IN THE  
FRANKFURTER  
ALLGEMEINE  
ZEITUNG**

## ➤ **NO COUNTRY HAS AN UNLIMITED DEBT CAPACITY**

economic output, unless budgetary policy were to generate permanent surpluses in the current budget.

This differentiation is highly relevant for the present debate around the debt brake and the EU SGP. For Germany and most EU countries, the last few pre-COVID years were a time when interest rates were well below the growth rate. These fiscally prosperous times are now over, and it is highly likely that they will not resurface in the coming decades. European government bond yields ( $r$ ) have increased both in nominal and real terms, when realistic inflation expectations are used as a reference point. At the same time, the prospects for potential growth ( $g$ ) are



## ➤ DEFICITS SHOULD ONLY BE PERMISSIBLE FOR EXPENDITURES THAT INCREASE **GROWTH POTENTIAL**

falling. Demographics, but also the decline of Europe's competitiveness, are further reducing prospects for growth in Germany and in other European countries. It is no wonder, then, that MIT macroeconomist Olivier Blanchard recently backtracked on some of his statements. In an influential speech in 2019, Blanchard pointed out the yet-untouched margin of government debt, using the argument that  **$r$  was smaller than  $g$** . Now, he is cautioning against exploding debt levels across the United States and Europe. The tides have turned, he claims, and in the meantime,  **$r$**  has grown to be equal to or greater than  **$g$** . According to Blanchard, this means the maximum margin for debt, as perceived by the markets, is progressively waning. Without external guarantees from the EU or the ECB, Europe's deeply indebted countries are unlikely to have any significant fiscal space remaining. This was already evident during the pandemic, when major crisis recovery programmes in Italy and Spain could not be financed entirely on a national level. This necessitated the creation of large-scale EU financial operations to guarantee a united economic recovery from the effects of the pandemic. The increasing constriction



HEAD OF ZEW RESEARCH UNIT  
"CORPORATE TAXATION AND PUBLIC FINANCE"

**PROF. DR. FRIEDRICH HEINEMANN**

of the remaining debt space has at least **FOUR CONSEQUENCES** for the debate over the reform of national and European fiscal rules.



## ➤ THE FOUR CONSEQUENCES

1.

Reliable fiscal rules are more important today than ever before. Such rules signal to capital markets that a debt crisis is not on the horizon, despite an already dangerously high debt ratio. A softening of the rules would have a destabilising effect and would further increase the danger of a new debt crisis.

2.

Any reform of the debt rules must aim to strengthen growth potential by reducing **“r minus g”** again. Therefore, deficits should only be permissible for expenditures that increase growth potential. However, this condition is not met when it comes to many pressing European responsibilities, such as defence, social convergence and the financing of global public goods for development aid or for the climate. While all of these areas of expenditure may be politically necessary, they rarely contribute to raising national growth potential and should therefore not be financed by debt, unless we are willing to set a problematic expansion of government debt into motion.

3.

Effective fiscal rules are indispensable for establishing reliability in monetary policy. If the eurozone’s debt were to continue to spiral out of control because of a relaxation of the rules, there would be increasing pressure on the ECB to limit interest rates and differentials between countries in Europe through a correspondingly loose monetary policy. This would ultimately lead to an inflationary “solution” to the debt problem.

4.

Effective fiscal rules continue to be indispensable, and not only in countries with high debt. Even for Germany, which has a comparatively low debt rate, sound fiscal rules remain essential from a wider European perspective. This is because the fiscal stability of Germany is critical for the functionality of European financial instruments such as Next Generation EU. Without Germany as a guarantor, it would no longer be possible to finance these instruments. Were the debt space to wane in Germany, European financial stability would be at risk, as it has been largely dependent on the reliability of European credit instruments at least since the pandemic.



ZEW STUDY BY DR. CHRISTIAN RAMMER

# **TAX INCENTIVES FOR MORE STRENGTH**

Since its introduction in 2020, the government tax credit has increasingly established itself as an important tool for research funding in the German machinery industry. A growing number of companies are utilising the tax credit, referred to as “research allowance”.

According to a study by ZEW and VDMA (Association of German Mechanical and Plant Engineering), companies value several aspects of the research allowance: the improved financing options, easier access to government funding for research and development (R&D), and flexibility in the use of funds. However, there is room for improvement in administrative processes.

The use of the research allowance is growing rapidly: By the beginning of 2024, around 1,600 companies had submitted over 4,500 projects. This accounts for 17 per cent of all project proposals submitted in Germany, making the machinery industry the sector with most applications. The number of applicants increased by almost 60 per cent in 2023 alone. This means that approximately 40 per cent of all eligible companies in the sector have already applied for the tax credit. The approval rate is around 90 per cent; predictability for companies is therefore high. By the end of January 2024, the approved funding volume was 130 million euros. However, there are often inquiries from tax offices, which increases the bureaucratic burden. The Growth Opportunities Act of March 2024 aims to strengthen the impact of the research allowance: The government plans to raise the cap on eligible expenditure from 4 million to 10 million euros per year. This could potentially increase the funding volume by 60 per cent to 1.3 billion euros and would include support for larger medium-sized enterprises. The expansion of the research allowance is seen as an important step towards more innovation and strong growth.



## **STUDY**

“Use of the R&D Tax Credit  
in the Machinery Industry:  
Results and Effects”

[www.zew.de/PU85992](http://www.zew.de/PU85992)

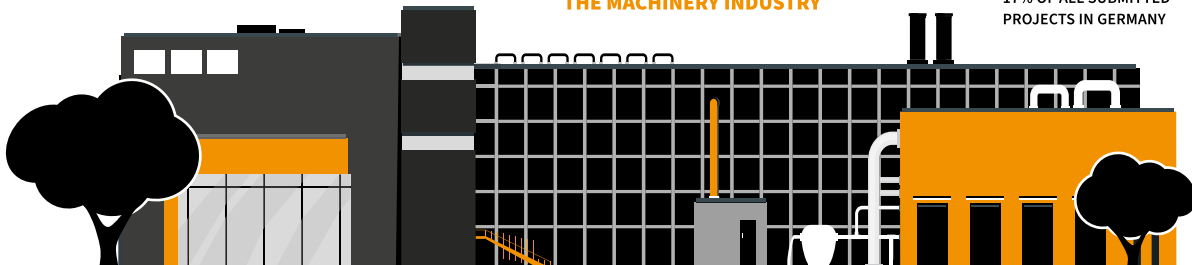


**R&D TAX CREDIT TO BECOME  
A SUCCESS STORY IN  
THE MACHINERY INDUSTRY**

## **APPLICATIONS FROM 2021 TO 2024:**

➤ **1,600 COMPANIES**  
➤ **4,500 PROJECTS**

= 17% OF ALL SUBMITTED  
PROJECTS IN GERMANY



MANNHEIM TAX INDEX OF ZEW'S RESEARCH UNIT  
"CORPORATE TAXATION AND PUBLIC FINANCE"

# TAX REFORM FOR MORE STRENGTH

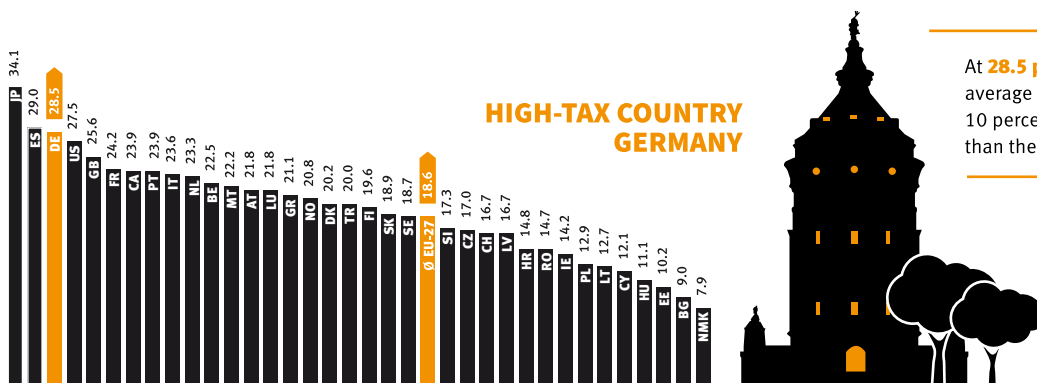
The Mannheim Tax Index of ZEW underscores Germany's continued status as a high-tax country in global tax competition. At 28.5 per cent, the average tax burden for companies in Germany is almost 10 percentage points higher than the EU average. Investing in Germany is not attractive by international standards. A reform is urgently needed. This is particularly evident when comparing the situation in Germany with France and the United Kingdom.

Measures currently under discussion to improve the country's tax attractiveness include more generous depreciation rules for movable assets (e.g. machinery, vehicle fleet), the abolition of the solidarity surcharge and a reduction of the corporate income tax rate to 25 per cent. An immediate write-off for movable assets, with its prompt investment-promoting effect, would align Germany with its important economic partner, the USA, in the international ranking of the Mannheim Tax Index.

Introducing degressive depreciation and eliminating the solidarity surcharge would only marginally decrease the effective tax burden on companies by 0.2 and 0.7 percentage points, respectively. A reduction of the corporate income tax rate to 25 per cent would have the strongest signalling effect, positioning Germany in the mid-range of Western European investment locations, with an effective tax burden of 23.5 per cent. However, this scenario poses a high risk of free riding. Overall, achieving a noteworthy improvement in tax attractiveness is not possible without a significant reduction in tax revenue in the short term.



MANNHEIM TAX  
INDEX  
[www.zew.de/  
mannheim-tax-  
index](http://www.zew.de/mannheim-tax-index)



At **28.5 per cent**, the average tax burden is almost 10 percentage points higher than the EU average



ZEW STUDY BY DR. TABEA BUCHER-KOENEN,  
PROF. DR. ROB ALESSIE, ANNAMARIA LUSARDI AND MAARTEN VAN ROOIJ

# STRENGTH THROUGH CONFIDENCE ABOUT FINANCIAL TOPICS

Globally, women score lower than men in terms of financial education.  
However, part of the gender gap in financial literacy is attributable to a lack  
of self-confidence rather than just a lack of knowledge.

In a ZEW study, researchers have developed a model to measure “true” financial literacy based on data from a household survey in the Netherlands. According to the analysis, about 30 per cent of the financial literacy gender gap can be explained by lower confidence levels. Women are more likely to respond “do not know” to financial questions, although they often know the right answer. The researchers conducted two survey modules to examine how self-confidence influences responses. In the first module, the respondents had the option to select “do not know”. In the second module, this option was removed, requiring participants to choose an answer. The results show that many women were capable of selecting the right answers when forced to make a choice, with a high likelihood of choosing correctly.

The study also investigates how financial literacy and self-confidence affect financial decisions, particularly stock market participation. Women who possess both financial knowledge and self-confidence are more likely to participate in the stock market and make provisions for retirement. This underlines the importance of the combination of both factors when making informed financial decisions.



## STUDY

“Fearless Woman:  
Financial Literacy  
and Stock Market  
Participation”

[www.zew.de/PU82387](http://www.zew.de/PU82387)



## APPROXIMATELY 30 PER CENT

of the financial literacy gender  
gap is attributable to women’s  
**low confidence** in their  
financial knowledge.





# ***STRENGTH* FOR THE LABOUR MARKET**

**STUDY BY PROF. DR. ANDREAS PEICHL, PROF. DR. HOLGER BONIN  
AND PROF. DR. HOLGER STICHNOTH**

# MORE STRENGTH FOR THE *LABOUR MARKET*

A reform proposal elaborated by the ifo Institute and ZEW Mannheim shows: Making smaller cuts to social benefits for recipients of Germany's basic income ("Bürgergeld") who are willing to work more would increase their participation in the labour market.

The proposal targets single parents and single people without children, as well as couples with three or more children, because this is where the employment effects occur. At present, social benefits such as the housing benefit are reduced by between 80 and 100 per cent for incomes between 520 euros and 1,000 euros per month. In order to make it worthwhile to take on additional work, by ensuring that more net income is left over from the supplemental earnings, the reform provides for social benefits to be reduced by only 70 per cent in the future up to an income limit of 2,000 euros. For those earning more than 2,000 euros a month, benefits would be cut by only 65 per cent instead of 100 per cent. This would strengthen the labour market by increasing employment by 136,000 people or 145,000 full-time positions. It would also relieve the federal budget and enable the reform to finance itself. A further increase in employment by 157,000 people or 165,000 full-time positions would be possible if the crediting rate for the basic child allowance was reduced. The reform is self-financing and designed to ensure broad acceptance among the general public. The introduction of a single basic social security would simplify and strengthen it even more.



## STUDY

"Reform of transfer withdrawal rates and improvement of employment incentives"

<https://bmas.de/DE/Service/Publikationen/Forschungsberichte/fb-629-erwerbstaetigen-freibetraege>



**MORE NET INCOME REMAINING  
FROM GROSS INCOME  
INCREASES EMPLOYMENT**

**+136,000** OR **+145,000**  
People Full-time positions



APPROXIMATELY  
**+ 1.1 BILLION  
EUROS**  
NATIONAL BUDGET



**ZEW POLICY BRIEF BY PD DR. FRIEDHELM PFEIFFER  
AND DR. JESSICA ORDEMANN**

# **MORE STRENGTH FOR VOCATIONAL TRAINING**

The higher the level of education, the higher the wages. This statement still holds true today, even though the wage gaps between academic and vocational qualifications have been narrowing for some time. The trend is making vocational professions more attractive again.

ZEW Mannheim in collaboration with the German Centre for Higher Education Research and Science Studies (DZHW) conducted a study on the impact of the expansion of higher education, i.e. the increasing percentage of university entrants. The researchers illustrate how the wage gaps between individuals with university degrees and those with vocational training have evolved from 1996 to 2021, showing the development separately for women and men.

The number of university graduates has only slightly increased since 2015. At the same time, the wage gap between university graduates and individuals holding vocational qualifications has decreased, reaching mid-90s levels for women. This weakens the incentives for higher education, even though a university degree still promises a good educational return. Vocational training, on the other hand, becomes more attractive since firms pay higher wages to win skilled professionals. It is the responsibility of both policymakers and companies to make the right investments to enable young people to embark on sustainable careers. The declining wage gap is the result of several factors: the academisation of people with less motivation to study; the positive effects of the minimum wage introduced in 2015 on middle- and lower-income groups; the growing popularity of degree programmes with lower wage levels such as the humanities and social sciences; and the cost savings from working from home, which have been shared between employees and companies.



## **ZEW POLICY BRIEF**

“Academisation and the evolution of wage structures based on education levels”

[www.zew.de/PU85997](http://www.zew.de/PU85997)



**1996 – 2021**

**SINCE 2015**

the number of university graduates has only slightly increased

**MEAN WAGE GAPS  
BETWEEN UNIVERSITY  
DEGREES AND VOCATION/  
QUALIFICATIONS  
ARE BECOMING SMALLER.**



ZEW POLICY BRIEF BY DR. BASTIAN KRIEGER

# STRENGTH THROUGH INTERNATIONAL KNOWLEDGE

The value of knowledge services imported by Germany has more than doubled over the last decade to reach over 46 billion US dollars in 2022. This makes Germany one of the largest knowledge-importing nations worldwide. Large companies in particular benefit from knowledge imports. By contrast, SMEs are still hardly exploiting the potential.

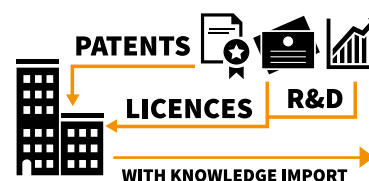
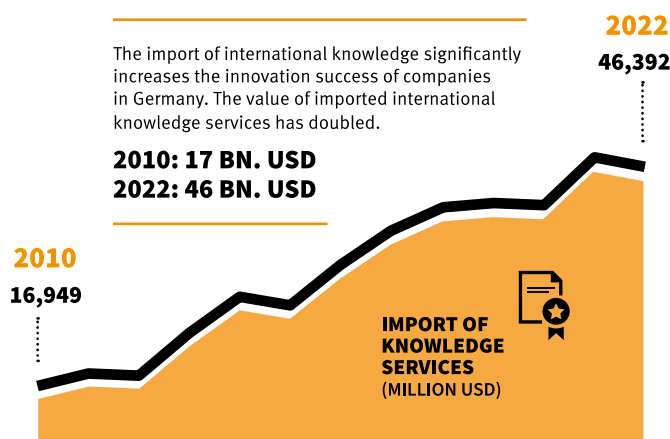
The probability of innovation is much higher in companies with access to international knowledge – 68 per cent compared to 33 per cent in firms that do not import knowledge services. The EU is becoming increasingly important as a source of knowledge imports: Its share rose from 35 per cent in 2010 to 44 per cent in 2019. This trend is in line with the recommendation by the Federal Ministry of Education and Research to focus on reliable partners in international cooperation in order to strengthen technological sovereignty and resilience. As protectionism grows around the globe, German economic policy should aim to further reduce trade barriers within the EU single market. SMEs in particular could benefit more from knowledge imports. External technologies and patents would help them to enhance the efficiency of their processes and develop products that are more innovative. This would not only strengthen their competitiveness but also bring additional innovation gains for the German economy as a whole.



## STUDY

“International  
Knowledge Boosts  
Firm Innovation”

[www.zew.de/PM9172](http://www.zew.de/PM9172)



**68 PER CENT**  
probability of innovative  
product development



***STRENGTH***  
**FOR THE**  
**FUTURE**

**ZEW STUDY BY DR. CHRISTIAN RAMMER**

# **STRENGTH THROUGH INNOVATIONS**

The chemical industry in Germany is one of the key suppliers of innovations for the entire German economy, according to an analysis by ZEW. Not only does it supply the food, pharmaceutical, semiconductor and environmental technology industries, but the patents that originate from chemical research make an extraordinary contribution to the sustainability goals of the United Nations.

In 2022, the chemical industry invested around 5.5 billion euros in research and development (R&D). This makes it by far the most research-intensive economic sector within the German materials technology industries: The chemical industry alone accounts for around 60 per cent of the total R&D expenditure of 9.4 billion euros in this field. It is a strong partner for innovations based on chemistry and, with its extensive R&D results, offers a valuable technology pool for customer industries such as automotive engineering, the electrical industry and the health care sector. The entire German economy benefits from a domestic chemical industry that is strong in research and participates in global developments in the field of material technologies.

Innovations from the chemical industry are not just fundamental for downstream industries. The patents that originate from the chemical sector also contribute to many of the Sustainable Development Goals (SDGs) that the United Nations set for itself in 2015. The high share of chemical patents in all patent applications for an SDG goal illustrates the contribution of chemistry to the development of technological solutions, underscoring the relevance of chemistry for progress in the respective target area. Still, it is important to bear in mind that the social challenges behind the SDG goals cannot be tackled solely through new technologies. Nevertheless, technological solutions are a central building block for achieving the SDG goals.



## **STUDY**

“The Importance of the Chemical Industry in the German Innovation System”

<ftp.zew.de/pub/zew-docs/gutachten/InnoIndi-Chemie2024-Schwerpunkt.pdf>



**GERMAN CHEMICAL INDUSTRY  
PLAYS KEY ROLE IN DRIVING  
INNOVATION ACROSS THE ECONOMY**

**R&D INVESTMENTS IN 2022**  
➤ **55.5 BN. EUROS = 60 PER CENT**  
OF ALL R&D EXPENDITURE

**R&D EXPENDITURE IN  
MATERIALS TECHNOLOGY  
INDUSTRIES**

➤ **9.4 BN. EUROS**  
(= 100 PER CENT)





ZEW STUDY BY PROF. DR. IRENE BERTSCHEK, DR. THOMAS NIEBEL, DR. CHRISTIAN RAMMER,  
ROBIN SACK AND DR. BETTINA SCHUCK

# STRENGTH IN THE ICT SECTOR

The information and communication technology (ICT) sector is flourishing. Employment is at an all-time high and the sector boasts leading start-up and innovator rates in comparison to other industries. Additionally, the nominal turnover has experienced unprecedented growth. Thanks to its dynamic development, the sector is making an above-average contribution to both overall economic growth and Germany's future competitiveness.

According to a study by ZEW researchers, the ICT sector's total turnover surged by twelve per cent in 2022 compared to the previous year, reaching a new peak of almost 315 billion euros. This followed a partial recovery from the pandemic-induced decline in 2020. However, the generally high inflation in 2022 also acted as a driver of turnover. With a six per cent increase in employed individuals, the ICT sector experienced substantial employment growth in 2022, surpassing all comparable industries. The number of self-employed workers and employees liable to social security contributions has increased by nearly 83,000 to just under 1.5 million. Over the entire observation period (2009–2022), the number of people in employment grew considerably faster than in all other sectors. In 2022, the sector comprises around 99,000 companies, representing 3.9 per cent of the total commercial economy in Germany. Notably, the ICT sector is the only one among the examined industries recording a growth in the number of companies: almost 23 per cent in total between 2009 and 2020. The average start-up rate in the ICT sector is a good 7.3 per cent for the years 2020 to 2022 and thus by far the highest in the economy. The sector is also once again leading in terms of the so-called innovator rate. The innovation intensity – the share of turnover spent on the development and implementation of product and process innovations – has followed the general trend and records a decline compared to the previous year. However, at 8.6 per cent, the ICT sector still holds the second position behind the automotive industry.



## STUDY

"ICT Sector Profile 2023"

[www.de.digital/DIGITAL/Redaktion/DE/Digitalisierungsindex/Publikationen/publikation-ikt-branchenbild-2023.pdf?\\_\\_blob=publicationFile&v=3](https://www.de.digital/DIGITAL/Redaktion/DE/Digitalisierungsindex/Publikationen/publikation-ikt-branchenbild-2023.pdf?__blob=publicationFile&v=3)



## BOOMING ICT SECTOR

### RECORD TURNOVER

2021		2022
<b>281</b>	<b>12%</b>	<b>315</b>
BN. EUROS	↗	BN. EUROS

### PEOPLE IN EMPLOYMENT

2021		2022
<b>1.3</b>	<b>6%</b>	<b>1.5</b>
MILLION	↗	MILLION

	2009	2022
ICT OVERALL	914.9	↗ 1,454.9
ICT SERVICE PROVIDERS	683.1	↗ 1,223.9
ICT HARDWARE	231.8	↘ 231.0



ZEW POLICY BRIEF BY PROF. DR. WOLFGANG HABLA, KUMAI KOKASH,  
PROF. ÅSA LÖFGREN, PHD, DR. ANNA STRAUBINGER AND PROF. DR. ANDREAS ZIEGLER

# STRENGTH FOR CLIMATE ACTION

Without the approval of the general public, it is difficult for policymakers to implement measures in the transport sector for the purpose of reducing greenhouse gas emissions. The acceptance of such projects is largely dependent on the citizens' economic self-interests.

In addition to these insights, a representative survey shows: The more the citizens personally benefit from climate-friendly transport policies, for example through subsidies, the higher is the approval level for these policies. Measures that include financial support are the most popular. In addition, more than half of those surveyed support an increase in taxes on airline tickets. A speed limit on motorways is also more widely supported than opposed. In contrast, the de facto "combustion engine ban" and the introduction of highway tolls are less favourably received. However, it is worth noting that less than a third of respondents strongly disapprove of the controversial combustion engine ban, meaning that it could potentially gain favour in the future with the help of better political communication or supplementary measures.

There are two categories of climate policy instruments. Pull measures aim to increase demand for climate-friendly modes of transport by relieving financial burdens, for example through subsidies for public transport. Push measures, on the other hand, are intended to reduce demand for environmentally harmful modes of transport by way of bans, higher taxes or levies. While pull measures are indeed more widely endorsed overall than push measures, 17 to 27 per cent of respondents remain undecided, depending on the policy instrument. The reason for this could be that many people do not know what kind of impact certain projects will have. For this group, policymakers could use information campaigns to help increase understanding and support for climate policy instruments.



## ZEW POLICY BRIEF

"Promote or prohibit?  
What climate-friendly  
transport policies are  
popular with the public?"

[www.zew.de/PU86321](http://www.zew.de/PU86321)

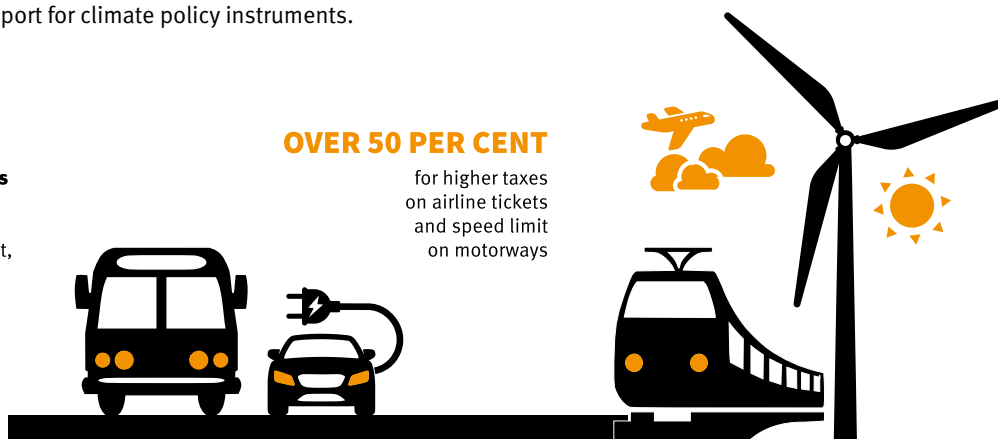


## ACCEPTANCE

of **climate-friendly transport policies** mainly depends on financial benefits for citizens. Supported **measures**: e.g. tax reductions for public transport, subsidies for electric cars.

## OVER 50 PER CENT

for higher taxes on airline tickets and speed limit on motorways





**RESEARCH  
UNITS**



**PROF. DR.  
TABEA BUCHER-  
KOENEN**

➤ **HEAD OF RESEARCH UNIT  
PENSIONS AND SUSTAINABLE  
FINANCIAL MARKETS**

➤ PENSIONS  
AND ***SUSTAINABLE***  
FINANCIAL  
MARKETS

# PENSIONS AND SUSTAINABLE FINANCIAL MARKETS

## HEAD

Prof. Dr. Tabea Bucher-Koenen

## DEPUTY HEAD

Prof. Dr. Karolin Kirschenmann

## RESEARCH AREAS

- Savings and old-age provision
- Financial literacy
- Expectation formation in financial markets
- Bank lending and its impact on the real economy
- Green Finance



## THE STRENGTH OF EU SECURITISATIONS

- Realistic view on market potential of European securitisations required
- To accelerate green transition, private investments need to be encouraged

In order to unlock the huge sums of private capital necessary for the green transition, the engagement of institutional investors, e.g. insurances or pension funds, appears to be crucial. In the medium term, however, the European economy will remain significantly dependent on bank financing. In a project funded by ZEW's Sponsors' Association, a ZEW policy brief investigates whether and how a better integration of the European banking system and capital markets via securitisations can be an effective solution to unlock the financial sector's potential in supporting the green transformation.

The study underlines that it is usually the "originate-to-distribute" model of securitisation (i.e. banks grant loans with the intention to sell them and not to hold them on their balance sheets) politicians and commentators have in mind when they talk about reviving the European securitisation market and using it as a catalyst for the green transition. But in the past years, most banks do not seem to have faced a myriad of attractive lending opportunities, nor were they restricted in funding sources or regarding their capital ratios. At the same time, investors only demand the securities if they fit their return-risk preferences, which is the case for a limited class of investors.

To accelerate the green transition, the required private real investments need to be encouraged in the first place by creating a conducive economic environment and the right incentives, e.g. through pricing carbon emissions and subsidising the development of new green technologies. Then, the financial sector will fund their commercialisation and diffusion. When loan demand increases, banks will need to free up space on their balance sheets and securitisation can play a more pronounced role.



### POLICY BRIEF

"Towards a More Realistic  
View on the Market Potential  
of EU Securitizations"

[www.zew.de/PU86286](http://www.zew.de/PU86286)



## FINANCIAL LITERACY AND ITS IMPORTANCE FOR FINANCIAL WELLBEING IN GERMANY

- In Germany, 62% of private households have basic financial knowledge
- Financial knowledge varies strongly depending on education and gender
- A higher level of financial literacy correlates with stock ownership and financial wellbeing

Financial knowledge plays a critical role in helping private households cope with economic crises. As current data show, around 38 per cent of German households are not able to answer questions about fundamental financial topics such as interest rates, inflation and risk. Women and individuals with low education in particular show a lack of financial literacy. These groups are therefore more prone to making the wrong financial decisions and they are less capable of managing financial difficulties.

The study uses data from the Panel on Household Finances conducted by the Deutsche Bundesbank, which regularly collects data on the financial situation of German households and their financial literacy. The analyses of the data for 2021 show that households with higher financial literacy have a higher stock market participation rate and are less likely to report financial difficulties. The economic challenges caused by the COVID-19 pandemic as well as the sharply increasing inflation and rising consumer loan rates highlight the need for financial education in the population. Germany has not yet implemented a nationwide financial literacy strategy. Future educational measures should focus on vulnerable groups with lower levels of financial literacy. A national strategy could also ensure a greater integration of financial education in the school curriculum and pave the way for independent and quality-assured educational offerings and information services to further the financial stability of private households in the long term.



### STUDY

“Financial Literacy,  
Stock Market Participation,  
and Financial Wellbeing  
in Germany”

[www.zew.de/PU86077](http://www.zew.de/PU86077)

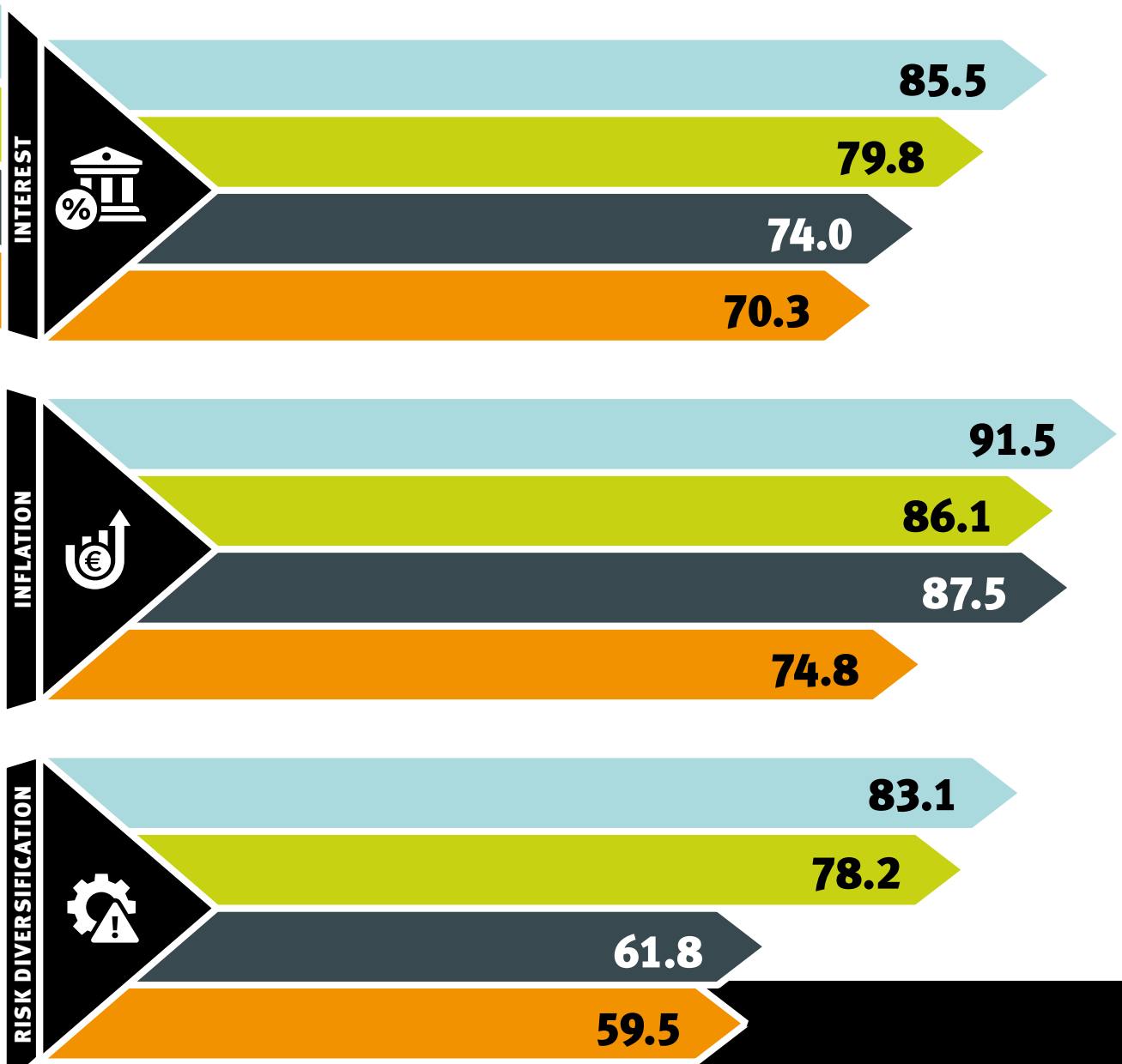


## FINANCIAL KNOWLEDGE HELPS TO MANAGE PERSONAL FINANCES:

**“ WHEN YOU THINK ABOUT THE TOTAL MONTHLY INCOME OF YOUR HOUSEHOLD – HOW WOULD YOU SAY YOUR HOUSEHOLD MAKES ENDS MEET? ”**

 **EASILY**       **FAIRLY EASILY**       **WITH SOME DIFFICULTY**       **WITH GREAT DIFFICULTY**

FINANCIAL LITERACY QUESTION ABOUT... (SHARE OF CORRECT ANSWERS IN %)



HOW TO READ THIS CHART: In the group of respondents who said they can “easily” make ends meet, 85.5% answered the financial literacy question about interest correctly.

SOURCE: Tabea Bucher-Koenen, Bennet Janssen, Caroline Knebel-Seitz and Panagiota Tzamourani (2024), Financial literacy, stock market participation, and financial wellbeing in Germany, Journal of Financial Literacy and Wellbeing 1(3), 486-513.

➤ **ZEW  
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➤ **LABOUR**  
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**SOCIAL**  
**INSURANCE**

# LABOUR MARKETS AND SOCIAL INSURANCE

## HEAD

Prof. Dr. Nicolas R. Ziebarth

## DEPUTY HEAD

PD Dr. Friedhelm Pfeiffer

## RESEARCH AREAS

- Education, migration and social mobility
- Structural change and social insurance
- Health at work

## **DIGITAL TRANSFORMATION ON THE BACK BURNER DURING PANDEMIC**

- The pandemic slowed down technology development
- Smaller adjustment investments at the expense of major investment projects
- The promotion of technology-intensive investments should be counter-cyclical

The COVID-19 pandemic was perceived by the public as a driver of digitalisation, not least because of the increasing spread of teleworking. But instead of providing a boost to digitalisation, the pandemic set back technology development, finds the new “Working World 4.0” representative company survey conducted jointly by ZEW Mannheim, the Institute for Employment Research (IAB), the Luxembourg Institute of Socio-Economic Research (LISER) and the Institute of Labor Economics (IZA).

Companies increasingly introduced technologies that enabled their employees to work from home, mitigating the negative employment effects of the pandemic. However, these adjustment investments were made at the expense of longer-term planned and more extensive investments. Overall, firms invested less in new digital technologies than they would have done had there been no pandemic: A little over a quarter of the investments planned for the period 2016–2021 were cancelled because of the pandemic. The current weakness in productivity in Germany may therefore also be due to the postponement of planned technology investments. In addition, the study findings suggest that the subsequent energy price shock and high uncertainty caused by the war in Ukraine have slowed the push for new technologies even further.

The focus of policymakers should therefore be more on helping companies to pursue major technology-intensive investments even in times of multiple and successive crises. One approach in this context could be to use targeted funding instruments in a counter-cyclical manner.



### **ZEW POLICY BRIEF**

“Digital transformation on the back burner: Fewer 4.0 investments during the pandemic”

[www.zew.de/PU86360](http://www.zew.de/PU86360)





## MORE INNOVATIVE STRENGTH: LOWER SICKNESS RATES WITH HALF-DAY SICK LEAVE

- Sick notes over the phone are not the cause of the sharp increase in sick days since 2022
- The increase is due to the electronic certificate of incapacity for work, which improves absence recording
- Half-day sick leave after Scandinavian model is recommended

Sickness absence in Germany has strongly increased. This has led to calls from parts of the economic and political spheres to abolish sick notes over the phone again as they were considered to be responsible for this development. ZEW researchers have therefore analysed possible reasons for the unusually sharp increase in days of incapacity to work due to illness (AU days) since 2022.

First, according to the study, there is no plausible evidence that days of absence increased so strongly because sick notes were issued over the phone. This practice began in the early stages of the pandemic and was then suspended for some periods in 2023. However, sickness rates did not follow this pattern but fell from 2019 to 2021 before rising sharply in 2022 and 2023. Second, unusually strong waves of colds and flu, in combination with a change in sickness reporting behaviour for infections since the pandemic, probably explain a smaller part of the increase. Third, the study shows that the increase is first and foremost due to the comprehensive introduction of the electronic certificate of incapacity for work in 2022. This means that because of the generous paid sick leave in Germany, sickness rates were already very high before 2022, especially in a global comparison. However, the statistics were incomplete and underreported the true sickness rates. In addition to company-specific measures, ZEW therefore proposes the statutory introduction of half-day sick leave. This model has existed in Sweden since the 1950s and was successfully used there 20 years ago to combat high sickness rates. If it were possible to convert just ten per cent of current absences into half-day absences, 45 million working days would be added to the German economy. According to ZEW researchers, that is a far greater number of additional working days than would be achieved if the CDU's active pension were to be introduced.



### ZEW POLICY BRIEF

"Assessment of the marked increase in days absence due to sickness since 2022"

[www.zew.de/PU86428](http://www.zew.de/PU86428)



# HOW OFTEN ARE THE GERMANS SICK?

DAYS OF INCAPACITY  
TO WORK DUE TO  
ILLNESS PER  
INSURANCE YEAR

26

25

24

23

22

21

20

19

18

17

16

15

14

13

12

11

10

9

## Electronic certificate of incapacity for work

SICK NOTE  
OVER THE  
PHONE



ELECTRONIC  
RECORDING\*

MV [24.9]

ST

BB

TH

SH

NI

NW

RP

BE

HE

HH

SN

BY

BW [15.7]

2000

2006

2012

'18

'20

'23

Ø 12.9 DAYS

Ø 15.5 DAYS

Ø 11.4 DAYS

\* By federal state

SOURCE: Techniker Krankenkassen (2024). Gesundheitsreport 2024



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# DIGITAL ECONOMY

## HEAD

Prof. Dr. Irene Bertschek

## DEPUTY HEAD

Dr. Dominik Rehse

## RESEARCH AREAS

- Diffusion of digital technologies
- Digitalisation and corporate strategies
- Digital platforms
- Digital market design

## HEAD

### JUNIOR RESEARCH GROUP

Digital market design

Dr. Dominik Rehse

## ALGORITHMS INFLUENCE INNOVATIONS

- While improving social welfare, streaming platforms use recommendation systems to bias consumption towards cheaper content
- Such recommendation systems lower incentives to invest in better content

Recommendation systems are ubiquitous in digital markets and a critical feature of streaming platforms. The adequate functioning of a recommendation system (and the consequent quality of the proposed matching) may determine whether a platform will thrive in the market. In a ZEW study, researchers explore the incentives of digital platforms to bias consumption through algorithmic recommendation, as well as the effects of such bias on the innovation incentives of the platforms' complementors (i.e. content creators).

Using a theoretical framework, the ZEW study shows that a hypothetical platform optimally designs a recommendation bias that shifts demand from content that is more expensive to cheaper offers. When the contents' price asymmetry reflects a difference in quality, the platform lowers the price premium of high-quality content and minimises the marginal costs of streaming it.

The findings of the study carry significant implications for the regulation of digital markets and the influence of subscription-based business models on sellers' innovation incentives. Demand steering occurs in equilibrium not due to sellers competing for visibility but due to the platform aiming to reduce competition. The platform has a vested interest in controlling the price premium associated with high-quality products and a strong market presence. Sellers with more expensive content face disadvantages, while the runners-up gain an unfair advantage, skewing consumer preferences in their favour. This has a negative effect on the incentives to innovate.



### ZEW DISCUSSION PAPER

"Not as Good as  
It Used to Be: Do  
Streaming Platforms  
Penalize Quality?"

[www.zew.de/PU86179](http://www.zew.de/PU86179)



## DIGITAL SOVEREIGNTY: GERMAN COMPANIES SEE NEED FOR ACTION

- Companies see dependencies in key digital technologies
- The main reasons are the lack of European alternatives and the technological superiority of providers and partners

While German companies recognise the importance of digital sovereignty, they also acknowledge a continuing strong dependency on non-European providers and partners, especially from the United States. In a representative survey conducted by ZEW, more than 80 per cent of 1,200 companies in the information economy and the manufacturing industry stated that they feel reliant on non-European providers or partners in at least one of the technological fields mentioned in the survey. The participating companies indicated this dependence particularly in the domain of software and applications. Other frequent dependencies regarding digital technologies include hardware and infrastructure, IT security technologies and digital platforms.

These findings and other insights from the ZEW study “The Perspective of German Companies on Digital Sovereignty” were presented at the 2024 Digital Summit, an event organised by the German government, and were discussed with a panel of experts from politics, business and civil society. The study, which ZEW conducted on behalf of the Federal Ministry for Economic Affairs and Climate Action (BMWK), sheds light on Germany’s current challenges regarding digital sovereignty. The term “digital sovereignty” refers to the ability to shape the digital transformation in terms of hardware, software, services and competencies in a self-determined way. With regard to digital technologies and applications, this means being able to decide for oneself how dependent one wants to be on providers and partners.



### STUDY

“Digital Sovereignty”

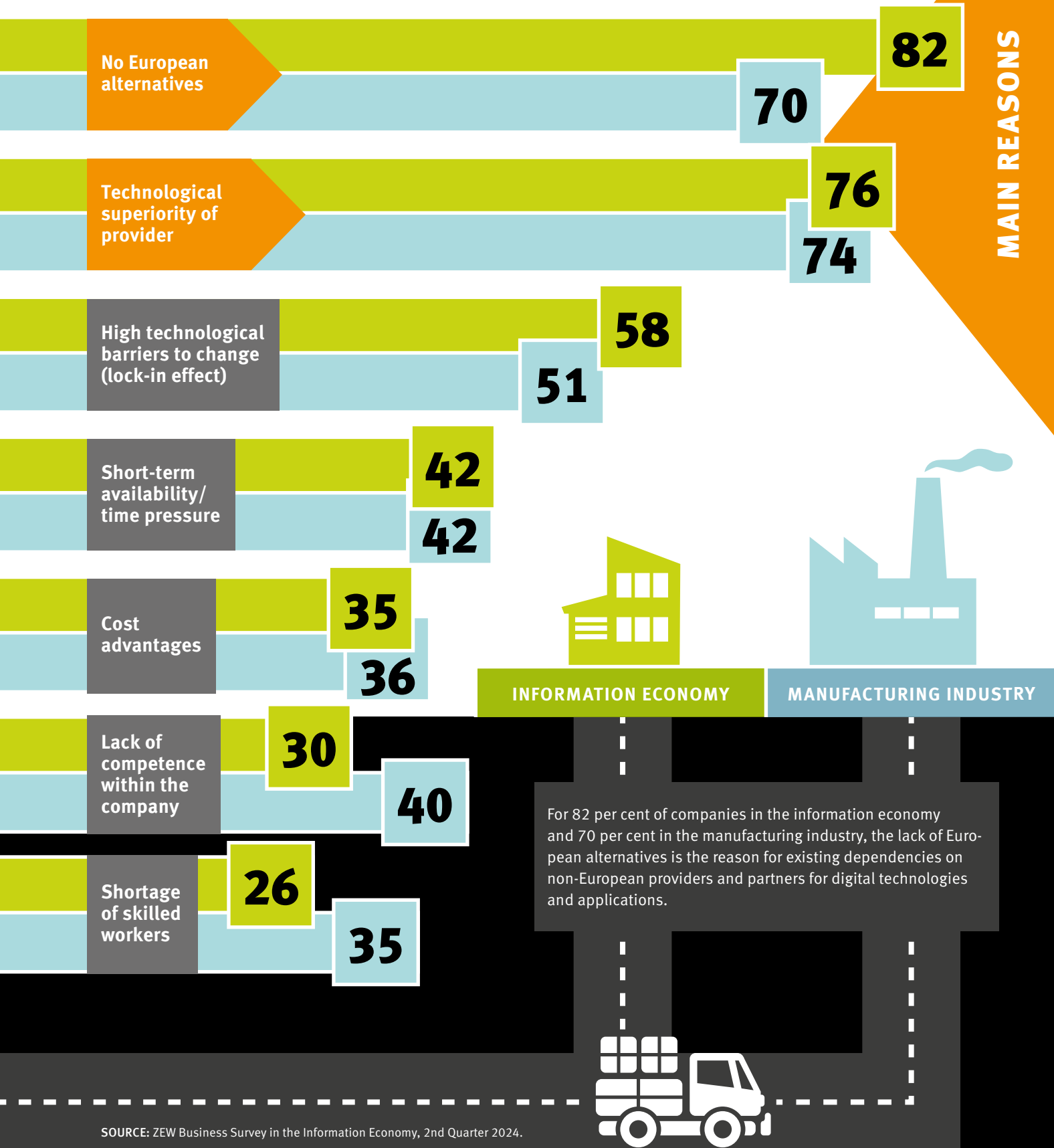
<https://de.digital/DIGITAL/Redaktion/DE/Digitalisierungsindex/Publikationen/publikation-schwerpunkt-digital-souveraenitaet.pdf>





# WHY COMPANIES DEPEND ON NON-EUROPEAN PROVIDERS/PARTNERS

(SHARE OF COMPANIES WITH EXISTING DEPENDENCIES IN %)





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ECONOMICS OF INNOVATION  
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OF *INNOVATION*  
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*DYNAMICS***

# ECONOMICS OF INNOVATION AND INDUSTRIAL DYNAMICS

## HEAD

Prof. Dr. Hanna Hottenrott

## DEPUTY HEAD

Prof. Dr. Bettina Peters

Dr. Christian Rammer

## RESEARCH AREAS

- Innovation processes in firms
- Dynamics of the corporate sector:  
Firm foundations, firm closures and M&As
- Generation and exchange of knowledge  
in industry and science
- Competition between firms

## HEAD

### JUNIOR RESEARCH GROUPS

#### Co-Creation

Dr. Bastian Krieger

#### Competition and innovation

Prof. Dr. Bernhard Ganglmair

## **INNOVATION ACTIVITY OF GERMAN COMPANIES IS SUFFERING FROM LONG COVID**

- Firms heavily affected by COVID-19 in 2020 are still slow in investing in innovation two years later
- The pandemic caused innovation spending to decline by 9 billion euros

A joint study by ZEW and the University KU Leuven (Belgium), which was published in the renowned journal *Research Policy*, examines how the COVID-19 pandemic affected innovation spending by German firms in the medium and long term. Using representative data from the Mannheim Innovation Panel, the researchers have shown the following: Companies that were heavily affected by COVID-19 in 2020 reduced their investment in innovation substantially, not only in the first pandemic year (2020) but also in the two subsequent years. They suffer from Long-COVID innovation effects: Their innovation expenditure in 2021 grew by 2.3 percentage points less than that of firms whose business activities in 2020 were only slightly affected by the pandemic. In 2022, there was still a gap of 0.9 percentage points. This effect was mainly due to companies that had only a low level of digital capabilities before the pandemic. By contrast, highly digitalised firms proved to be more resilient in the crisis and did not curtail their spending on innovation. The study has also found that companies experiencing an unexpected positive demand shock due to COVID-19 reduced their innovation expenditure as well and postponed innovation activities in favour of building up new production capacity.

These short- and medium-term innovation reactions had a considerable macroeconomic impact. COVID-19 caused a loss of 9 billion euros in innovation spending in the years 2020 to 2022. Actual spending on innovation was therefore 5.4 per cent less than it would have been without the pandemic.



### **ZEW DISCUSSION PAPER**

“Pandemic Effects:  
Do Innovation Activities  
of Firms Suffer From  
Long-Covid?”

[www.zew.de/PU84085](http://www.zew.de/PU84085)



## MIGRANT FOUNDERS ARE MORE INNOVATIVE

- 15 per cent of businesses are formed by founders with a migrant background
- Migrant founders more frequently report financing difficulties

In collaboration with the Bertelsmann Stiftung, ZEW's Research Unit "Economics of Innovation and Industrial Dynamics" has looked at the past 20 years of business formation activities in Germany with a particular focus on the aspect of immigration experience. The joint study shows that around 15 per cent of the German businesses interviewed have at least one founder with a migrant background. The proportion has increased by 10 percentage points since 2005.

Founders rarely immigrate specifically to set up a business, but usually live in Germany for many years before they become entrepreneurs. Those with a migrant background are more likely to have a university degree than are entrepreneurs without immigration experience, and they are most likely to work in consumer-related and business services, as well as in retail and the construction industry. When taking account of these structural differences, significant divergences between the two groups are noticeable with regard to research and development (R&D) spending and successful innovations. Migrant start-ups are 10 per cent more likely to introduce new products or services to the market and they are more often engaged in R&D activities.

At the same time, when it comes to sales and employment figures, migrant start-ups develop similarly to their counterparts without immigration experience. However, founders with a migrant background more frequently report financing difficulties. These difficulties seem to be considerable and, combined with a lack of external financing sources, slow migrant entrepreneurs in translating their greater innovative strength into business growth. The findings of the ZEW study underline the long-term innovation potential of immigration – a potential which, however, can only be fully exploited if hurdles are removed, particularly in the area of financing.



### PROJECT

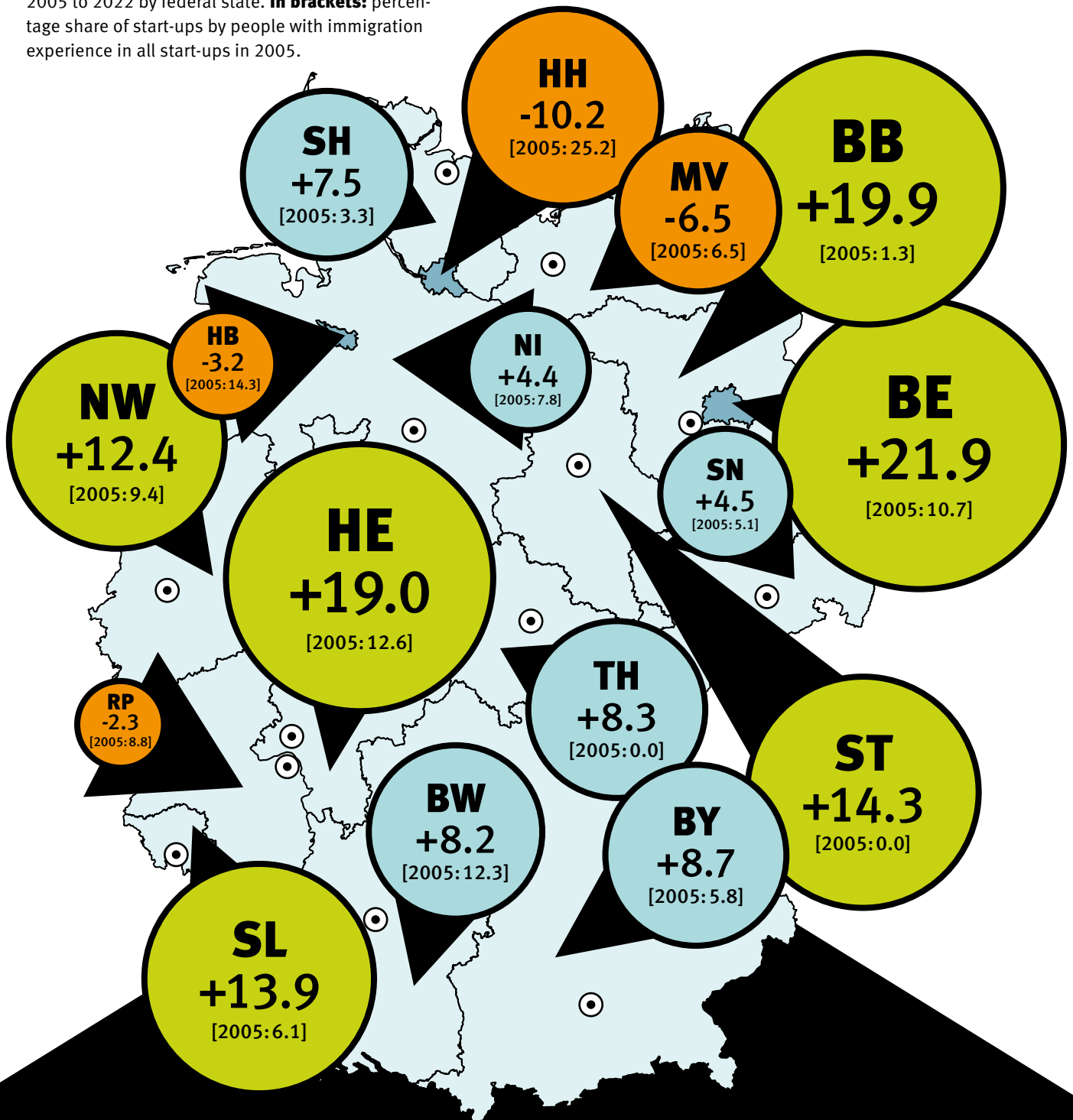
"The Role of Migrant Entrepreneurs in the Strategic Orientation and Financing of Start-ups"

[www.zew.de/PJ3704](http://www.zew.de/PJ3704)



# GEOGRAPHIC DISTRIBUTION OF MIGRANT START-UPS

The map shows the change in the **percentage share** of migrant start-ups in all business formations from 2005 to 2022 by federal state. **In brackets:** percentage share of start-ups by people with immigration experience in all start-ups in 2005.



**CHANGE IN THE PERIOD OF 2005 TO 2022:**  
CHANGE IN THE PERCENTAGE SHARE OF  
START-UPS WITH IMMIGRATION  
EXPERIENCE (IN PP)

● DECREASING   
 ● INCREASING   
 ● STRONGLY INCREASING



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**PROF. ACHIM  
WAMBACH,  
PHD**

➤ **HEAD (ACTING)  
OF RESEARCH UNIT  
MARKET DESIGN**



➤ **MARKET**  
**DESIGN**

# MARKET DESIGN

## HEAD

Prof. Achim Wambach, PhD  
(acting head)

## DEPUTY HEAD

Dr. Marion Ott

## RESEARCH AREAS

- Auctions
- Matching markets
- Allocation processes
- Hub for field experiments

## DESIGN OF STABLE MATCHING MARKETS IN THE EVENT OF CHOICE MISTAKES OR DISTORTED CHOICES

- Choice mistakes or distorted choices can lead to instabilities
- Simplified allocation procedures with sequentially announced cutoff dates can restore stability

Research into stable allocation procedures, as for example used in the allocation of school or nursery school places, focuses on the allocation of individuals to institutions on the basis of the choice behaviour of both market sides. An allocation procedure is considered stable if no individual wishes to exchange their allocated institution for another that would be willing to accept them.

Existing research focuses primarily on the choice behaviour of institutions, while individuals are usually assumed to behave rationally. However, studies in behavioural economics, psychology and marketing show that individual decisions are often influenced by mistakes and behavioural biases.

A ZEW study illustrates how instabilities can occur in conventional allocation procedures when individuals deviate from rational choice behaviour. The study also shows which minimal conditions need to be placed on choice behaviour in order to ensure stable allocation procedures. It is crucial to present individuals with simplified decision options during the procedure. A suitable approach is using sequential procedures, where individuals make a binary choice between their current provisional allocation and another option.



### STUDY

“Non-Standard Choice  
in Matching Markets”

[www.zew.de/PU86426](http://www.zew.de/PU86426)



## ZEW HUB: INTERNATIONAL EXPERTS DEMONSTRATE POTENTIAL OF STUDIES CONDUCTED IN COOPERATION WITH AND WITHIN ORGANISATIONS

- Intensive exchange and new impetus for academia
- Cooperation between scientific institutions and other organisations to find answers to economic policy challenges

The ZEW Hub aims to conduct field studies by directly cooperating with companies and organisations. The studies are to provide practical insights relevant to economic policy, enabling the development of evidence-based solutions. As part of this initiative, the first ZEW Conference “Research with and within organisations” was organised in September 2024, bringing together experts and practitioners to strengthen the bridge between science and practice. The keynote speakers discussed a broad array of topics, ranging from organisational frictions in retraining programmes (Professor Raffaella Sadun, PhD, Harvard University, USA) to advertising revenues on online platforms (Professor Steve Tadelis, PhD, UC Berkeley, USA) and the structures of social organisations (Professor Canice Prendergast, PhD, University of Chicago, USA).

One focus of the conference was to provide a platform for exchange with practitioners: Clemens Schmid (Roche Deutschland Holding GmbH) highlighted the challenges and opportunities of strategic human resource management, and a panel discussion addressed cultural and regulatory differences between Europe, China and the USA regarding the use of artificial intelligence by companies.

Finally, Dr. Lukas Kagerbauer (IHK Würzburg-Schweinfurt, University of Würzburg) chaired an open discussion on the topic of improving labour market integration of refugees. The conclusion was that Germany's “integration-first” model could be improved by learning from the “work-first” approach adopted in neighbouring European countries and by actively involving companies in integration measures. These measures should be combined with job-specific language courses and a pragmatic approach to the recognition of foreign qualifications. An optimised labour market design could facilitate access to more lucrative jobs for refugees and place them in companies that offer good integration opportunities.



### CONFERENCE

“Research with and  
within Organisation”

[www.zew.de/VA4370](http://www.zew.de/VA4370)



# ZEW HUB ENABLES JOINT STUDIES BY RESEARCHERS AND ORGANISATIONS

## **WIN-WIN-WIN**

for academia, organisations, clients and employees

## **JOINT DEVELOPMENT**

and research support for measures implemented

## **SYSTEMIC TRANSFER**

of research findings to the economy  
and civil society

# ZEW HUB

## ACA- DEMIA

- ▶ Methods
- ▶ New research findings
- ▶ Human capital

## ORGA- NISA- TIONS

- ▶ Data
- ▶ Research challenges
- ▶ Specialised know-how



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ECONOMICS***

# ENVIRONMENTAL AND CLIMATE ECONOMICS

## HEAD

Prof. Dr. Sebastian Rausch

## DEPUTY HEAD

Dr. Oliver Schenker

Prof. Kathrine von Graevenitz, PhD

## RESEARCH AREAS

- Impacts of environmental policy on firms and households
- Market mechanisms and decarbonisation policies
- Decarbonisation of the economy and sectoral impacts
- European emissions trading



## **HOW CLIMATE POLICY INFLUENCES INVESTMENT DECISIONS UNDER UNCERTAINTY**

- CO<sub>2</sub> taxes and emissions trading influence investment decisions differently in times of economic uncertainty

The transition to a low-carbon economy requires enormous investments in clean technologies. The incentive for private investors to invest in green technologies mainly depends on climate policy and the instruments employed to implement it.

A ZEW study shows that investors allocate their capital differently and invest in different technologies, depending on whether price-based climate policy instruments, such as carbon taxes, or quantity-based instruments, such as emissions trading, are used. If there is uncertainty about future electricity demand, price- and quantity-based instruments affect the return on investment in different ways. Risk-averse investors can therefore be expected to adjust their portfolio accordingly. In order to quantify these effects, the ZEW researchers developed and calibrated a stochastic model of the European power sector. The model simulations show that the representative portfolio of a risk-averse investor has a higher share of fossil fuel assets if the market is regulated by emissions trading than if CO<sub>2</sub> taxes are used as policy instruments instead. However, the overall proportion of power plants in the portfolio is smaller if the power sector is regulated via emissions trading.

The study illustrates that the design of climate policy influences the interplay of economic uncertainty and risk aversion and thus has an immediate effect on investment decisions. It is therefore crucial to evaluate the tools of climate policy especially with a focus on the management of uncertainty.



### **ZEW DISCUSSION PAPER**

“Regulated Correlations –  
Climate Policy and  
Investment Risks”

[www.zew.de/PU86382](http://www.zew.de/PU86382)



## EUROPEAN EMISSIONS TRADING AND NATIONAL INDUSTRIAL POLICY

- Political support for industrial sectors can result in inefficient distribution of emissions

European emissions trading (EU ETS) – the most important climate policy instrument at the EU’s disposal – limits the overall volume of CO<sub>2</sub> produced in regulated industries. It does not determine, however, in which sectors or regions emissions are to be reduced. This decentralised approach is efficient, as it directs emission reductions to where these reductions are cheapest. It also provides incentives to EU Member States to protect their domestic industries and shift emission abatement efforts to other countries. National policy measures, such as subsidies for energy-intensive industries, could help counteract domestic deindustrialisation. Compared to Germany, industrial CO<sub>2</sub> emissions in the other EU countries decreased twice as much in the period of 2005 to 2019. The ZEW study investigates whether this pattern reflects the efficiency of the EU ETS or whether Germany is turning into a “carbon haven”.

The researchers have quantified an economic model in order to separate the impacts that different influencing factors such as climate policy stringency or competitiveness have on CO<sub>2</sub> emissions. By combining data with the model, it is possible to deduce how the stringency of climate policy in Germany and the rest of the EU had to develop for the model to be able to rationalise actual trade flows, production and emission trends.

The analysis shows that German regulation stringency has declined more than in the rest of the EU, a contrast that is due to the national policies adopted. For example, the extensive use of subsidies for energy-intensive sectors in Germany may have contributed to carbon-intensive production processes increasingly being relocated to Germany. Had equally stringent climate policy applied throughout the EU, emissions by the German industry would have been lower.

The study findings highlight the importance of intra-European divergences in climate regulatory stringency. Supporting an industry through national policies can lead to an inefficient distribution of emissions within the EU.



### ZEW DISCUSSION PAPER

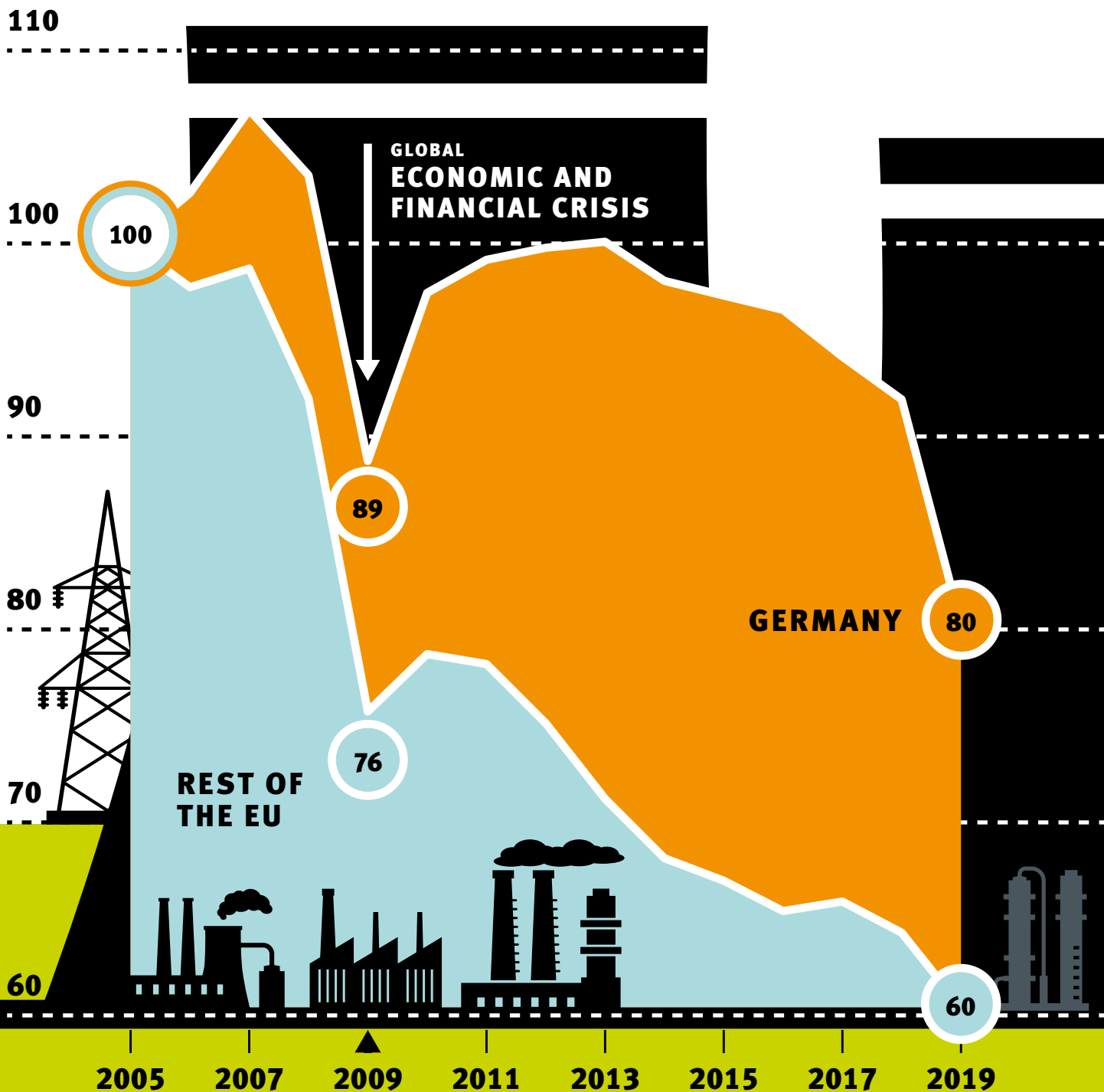
“Is Germany Becoming  
the European Pollution  
Haven?”

[www.zew.de/PU84981](http://www.zew.de/PU84981)



# DEVELOPMENT OF INDUSTRIAL CO<sub>2</sub> EMISSIONS IN GERMANY AND THE REST OF THE EU SINCE 2005

CO<sub>2</sub>-EMISSIONS  
(2005=100%)



SOURCE: IEA (International Energy Agency), data record "CO<sub>2</sub> emissions from fuel combustion"

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RESEARCH  
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➤ ***CORPORATE***  
**TAXATION AND**  
***PUBLIC FINANCE***

# CORPORATE TAXATION AND PUBLIC FINANCE

## HEAD

Prof. Dr. Friedrich Heinemann

## DEPUTY HEAD

Prof. Dr. Zareh Asatryan

Dr. Katharina Nicolay

## RESEARCH AREAS

- Tax location analyses
- Effects of corporate taxation
- Future-oriented budget management
- National and European fiscal rules
- Public procurement

## **FOCUS ON VALUE FOR MONEY IN THE GERMAN FEDERAL BUDGET INSTEAD OF OLD INPUT THINKING**

- ZEW and Deloitte advise Federal Ministry for Finance on establishing a target- and impact-oriented federal budget management

To this day, public households in Germany are characterised by an “input-oriented” perspective, i.e. policymakers use the amount of money directed to specific programmes as a metric for their commitment to a specific political aim.

This focus on budgets allocated is the reason why Germany is lagging behind many other OECD countries, which adopted an “impact-oriented” budget management approach already many years ago. In contrast to input-orientation, this new approach centres on the actual effectiveness of a budget in contributing to specific government goals: The success of a policy is not measured by the amount of money spent, but by the effectiveness of public funding.

For around ten years, the German government has been strengthening the impact orientation in its federal budget – for example, through overall evaluations as part of so-called “spending reviews”. Yet much remains to be done. The Federal Ministry of Finance therefore commissioned ZEW and Deloitte with developing a strategy that would ensure a comprehensive target- and impact-oriented management of the federal budget.

In April 2024, the project team presented a roadmap. The proposals made include better validation of independent evaluations; the allocation of budgetary resources only if there is evidence that an impact can be achieved; the embedding of impact orientation in public service training; and the development of an efficient digital infrastructure to ensure the timely availability of indicators for the impact of government spending programmes. The federal government took up the proposals from the ZEW/Deloitte study and included them in the agenda for the next spending review. In this way, the proposals will be disseminated more widely within the federal administration, thus stimulating change.



### **PROJECT**

“Creation of a concept for the introduction of performance budgeting in Germany”

[www.zew.de/PJ3574](http://www.zew.de/PJ3574)



## NUDGING FOR TAX COMPLIANCE

- Are nudges effective in improving tax collection?
- Reminders, tax morale and deterrence nudges do work
- Nudging can be optimised by better designing whom, when and how to nudge

Policymakers are increasingly relying on nudges – behavioural interventions that leave economic incentives intact – with the aim of improving individual decisions. Since tax collection is a central task of all governments, nudges are also frequently used to increase the compliance of individuals and firms in paying taxes.

Taxes are paid because of the taxpayers' inability to not pay and because of rational considerations due to the fear of getting caught cheating. However, they are also paid or not paid because of moral considerations and behavioural fallacies such as limited attention. Yet how effective are behavioural interventions in reality?

In a ZEW study, we have evaluated the evidence gained from around 70 randomised control trials to provide an answer to this question. We have identified three types of common nudges that work: 1) simple reminders, 2) nudges that refer to elements of tax morale and 3), most effectively, deterrence nudges that inform taxpayers about enforcement parameters. All types of nudging increase compliance relative to the baseline, at least in the short term. To make the most use of nudges, policymakers should design context-specific nudges, differentiating whom, how and when to nudge.

Nudges work best when they target non-compliant taxpayers, for example those late in paying taxes. Moreover, nudges tend to work only when based on short horizons of a couple of months; they should therefore be well timed, such as before major tax filing deadlines, and they should be repeated. Finally, nudges need to remain credible. Therefore, while deterrence nudges cannot substitute traditional enforcement tools, tax morale nudges should go along with real reforms that ensure an equitable tax system and sufficient provision of public goods.



### STUDIE

“Nudging for Tax  
Compliance:  
a Meta-Analysis”

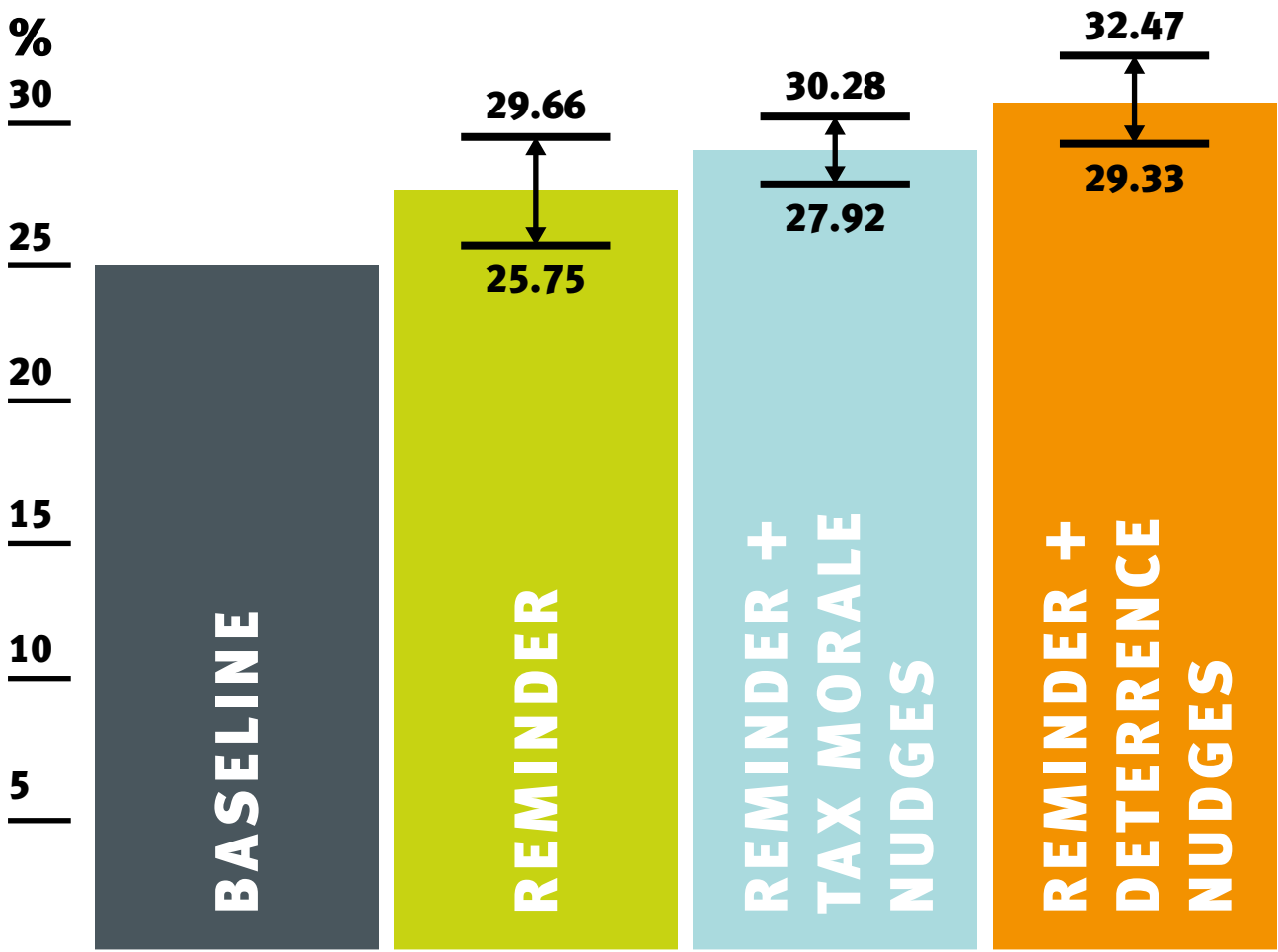
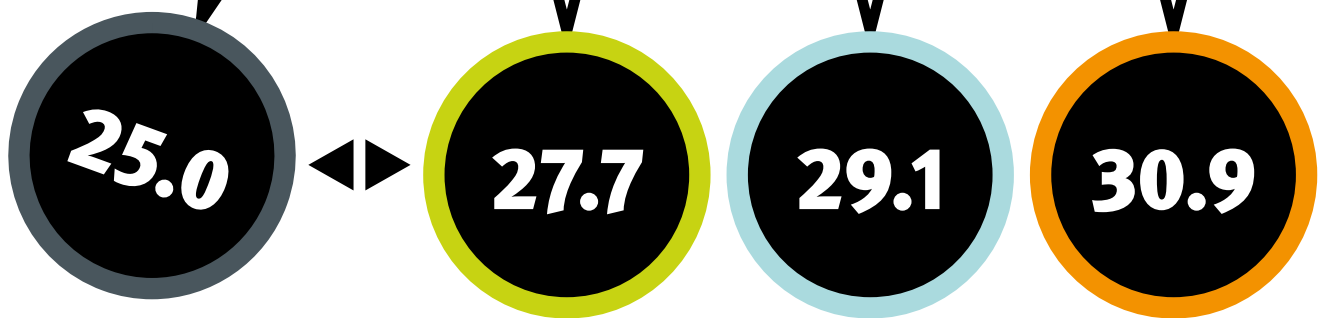
[www.zew.de/PU86430](http://www.zew.de/PU86430)





# HOW EFFECTIVE ARE NUDGES IN INFLUENCING TAX COMPLIANCE?

SHARE OF COMPLIANT TAXPAYERS (%)





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➤ **HEAD OF RESEARCH UNIT  
HEALTH CARE MARKETS  
AND HEALTH POLICY**

➤ **HEALTH CARE**  
***MARKETS* AND**  
**HEALTH *POLICY***

# HEALTH CARE MARKETS AND HEALTH POLICY

## **HEAD**

Prof. Dr. Simon Reif

## **RESEARCH AREAS**

- Digital health
- Market structures in health care
- Reimbursement of medical services

## **DIGITAL TRANSFORMATION OF THE HEALTH CARE SYSTEM**

- Economic research into digitalisation in health care still highly fragmented
- Workshop to promote interdisciplinary exchange and networking of scientific community

The digital revolution in health care is fundamentally changing how medical services are provided and managed and how new products are developed. Economists from various disciplines are increasingly analysing the impact digital technologies, IT and new data sources have on the health care system, markets and regulatory frameworks.

In view of these developments, a scientific workshop on the digital transformation in the health care sector was organised by ZEW, the Hasso Plattner Institute (HPI) and the German Institute for Economic Research (DIW) at HPI's Digital Health Cluster in Potsdam in June 2024.

The workshop aimed to present current research work and promote interdisciplinary exchange between research, practice and politics. It highlighted the great variety of topics in this still young field of research: The discussions covered, among others, the costs and benefits of digital health services, the role of information asymmetries, various remuneration models and economic aspects of data use in the health sector.

In 2025, the organisers will hold the next workshop, at ZEW Mannheim, to intensify the dialogue between economic researchers and with stakeholders from politics and business.



### **WORKSHOP**

**<https://www.digitalhealthecon.org/workshops/potsdam-2024>**



## A STRONGER HEALTH CARE SYSTEM

- Long-term incentives needed for improved health care

The German health care system provides comprehensive care by international standards. Nevertheless, according to health care quality indicators, Germany is lagging behind comparable countries with lower health expenditure. One reason for this is the short-term perspective of Germany's health policy and self-administration. ZEW researchers therefore propose a reform of the financing of the statutory health insurance providers: The currently applicable risk adjustment scheme ('Risikostrukturausgleich', RSA), which provides for the fair distribution of contributions from insured individuals among different health insurance providers, should adopt a longer-term perspective in order to reduce false incentives in health care provision.

The proposal of a "sustainable risk adjustment scheme" aims to promote long-term health care and prevention. In the current system, measures promoting the health of the insured do not offer any incentives to health insurance companies, as they mean less funding in subsequent years. The reform proposal provides for fund allocations to be calculated over a period of ten years. This would not only make long-term investments in prevention and innovative care models economically attractive – it would also incentivise health insurance companies to invest in the health of their members and provide more sustainable care, also to the benefit of the insured. The proposal further suggests that health insurers should be encouraged to not only cover treatment, but also play a more active role in shaping the quality of health care. In addition, to address the high number of chronic diseases and the relatively low life expectancy in Germany, prevention should be prioritised.



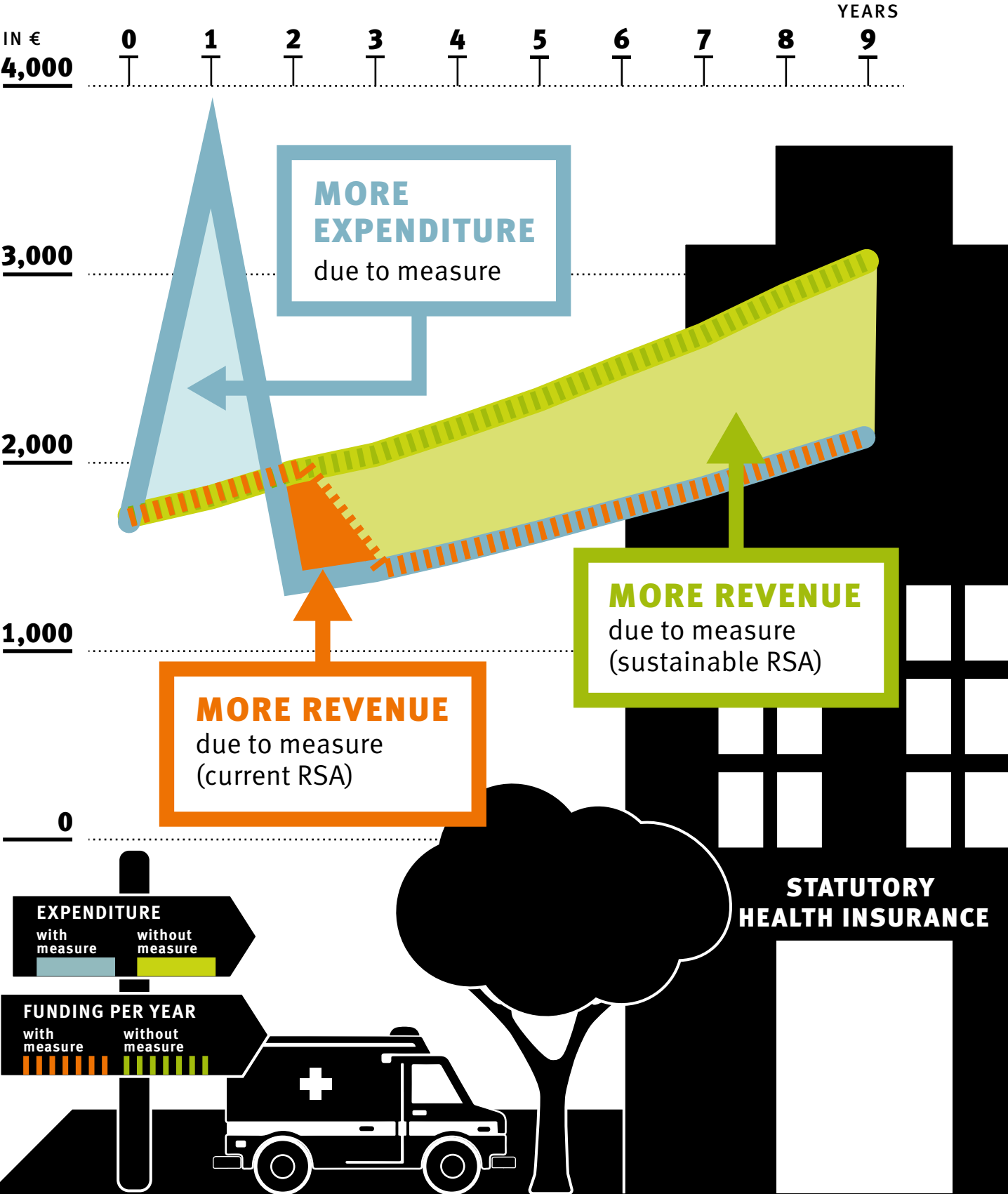
### ZEW POLICY BRIEF

"Reform Proposal for  
a Sustainable Risk Adjust-  
ment Scheme"

[www.zew.de/PU85986](http://www.zew.de/PU85986)



# PROPOSAL FOR A SUSTAINABLE RISK ADJUSTMENT SCHEME



SOURCE: Own representation. Based on calculations by the Federal Office for Social Security: Age-related expenditure profiles for statutory health insurance, 11 January 2023.

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➤ **INEQUALITY**  
**AND PUBLIC**  
**POLICY**

# INEQUALITY AND PUBLIC POLICY

## HEAD

Prof. Dr. Holger Stichnoth

## DEPUTY HEAD

Effrosyni Adamopoulou, PhD

## RESEARCH AREAS

- Inequality
- Tax and social policy
- Life cycle and the family
- Simulation models

## **QUANTIFICATIONS FOR THE INTRODUCTION OF BASIC CHILD ALLOWANCE**

- ZEW researchers provide quantitative data for legislative project
- Complex interface issues

The ZEW Research Group “Inequality and Public Policy” provided quantitative data in 2023 and 2024 to support the legislative project for the introduction of a basic child allowance. The quantifications were mostly based on the ZEW-EviSTA tax-transfer simulation model. The project, which was commissioned by the Federal Ministry of Family Affairs, Senior Citizens, Women and Youth (BMFSFJ), was conducted by a consortium formed by ZEW, the Institute of Labor Economics (IZA) in Bonn and the ifo Institute in Munich.

The basic child allowance (Kindergrundsicherung) was launched as one of the key social policy reforms of the German coalition government. According to the coalition agreement, the intention was to “strengthen families and lift more children out of poverty” and “create better opportunities for children and young people”. The project focused on assessing the distributional and budgetary effects of a basic child allowance. In addition, it examined the effects on the labour supply and on how various transfer payments were used. The many interfaces in the complex tax-transfer system played an important role. With the help of microsimulation models, interface problems in particular arising from the interaction of social benefits can be identified in advance and taken into account in the design of tax and transfer reforms.

The draft bill on basic child support was ultimately not passed. It provided for only minor increases in benefits, particularly for single parents on low incomes. The planned consolidation of benefits would have resulted in some simplifications, but at the same time new interface problems would have arisen. Key challenges such as the high and complex transfer withdrawal rates would also have remained unresolved with the basic child allowance. The recalculation of the minimum subsistence level for children announced in the coalition agreement was also only partially implemented in the draft law. As is generally the case with needs assessment, there is still a need for action here.

## EDUCATION AND INEQUALITY IN CHINA AND INDIA

- New detailed data record on development of education systems
- Links to inequality and economic development

A study by ZEW researcher Li Yang and Nitin Kumar Bharti (New York University Abu Dhabi, United Arab Emirates) compares the education systems of India and China and examines their impact on economic development. Although India and China had almost identical levels of prosperity in 1970, China's gross domestic product per capita is now five times higher than India's.

The study shows that China's bottom-up approach to education policy, starting in the 1950s with a focus on primary and secondary education, led to higher literacy rates and a larger proportion of engineers and skilled workers. This enabled China to reap the benefits of export-oriented growth in the manufacturing sector.

In contrast, India pursued a top-down approach that promoted higher education at the expense of primary education. As a result, the country has a lower literacy rate and a higher proportion of university graduates in the humanities, economics and law. India's economic growth has therefore been concentrated in the service sector.

The different approaches to education policy have historical roots. During the late 19th century, under the Qing dynasty, China focused on teaching vocational skills, while the British colonial rulers in India introduced a school system to train administrative staff.

Unlike the Chinese education system, the Indian approach has led to greater educational and wage inequality. Although the country has a higher proportion of university graduates, India is still struggling with a high illiteracy rate. This is an obstacle to structural change, as many people remain in the low-productivity agricultural sector.



### ZEW DISCUSSION PAPER

"The Making of China and India in the 21st Century: Long-Run Human Capital Accumulation From 1900 to 2020"

[www.zew.de/PU86564](http://www.zew.de/PU86564)




# TWO ECONOMIC POWERS – TWO PATHS

BACHELOR’S DEGREE BY FIELD OF STUDY, DECADE AVERAGES (%)


ENGINEERING  
SOCIAL SCIENCES

## CHINA

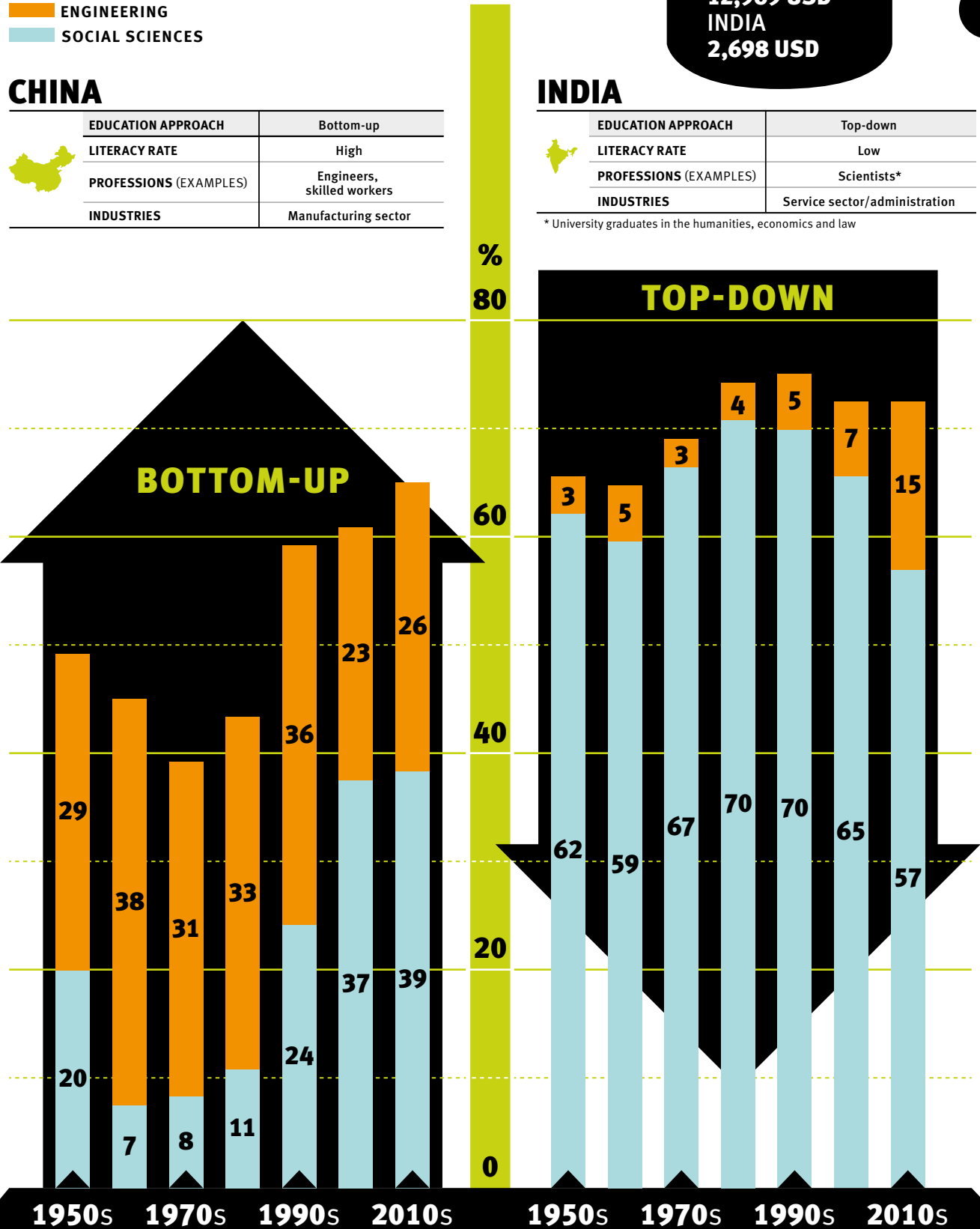
	EDUCATION APPROACH	Bottom-up
	LITERACY RATE	High
	PROFESSIONS (EXAMPLES)	Engineers, skilled workers
	INDUSTRIES	Manufacturing sector



## INDIA

	EDUCATION APPROACH	Top-down
	LITERACY RATE	Low
	PROFESSIONS (EXAMPLES)	Scientists*
	INDUSTRIES	Service sector/administration

\* University graduates in the humanities, economics and law



SOURCE: ZEW Discussion Paper "The Making of China and India in the 21st Century: Long-Run Human Capital Accumulation From 1900 to 2020"

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# IMPRINT

## **PUBLISHER**

ZEW – Leibniz Centre for  
European Economic Research  
L 7, 1 · 68161 Mannheim  
Germany  
[www.zew.de](http://www.zew.de)

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## **PRINT**

Elser Druck GmbH  
75417 Mühlacker

ZEW ANNUAL REPORT 2024  
29th edition · ISSN 1434-4424  
© ZEW, May 2025

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