ZEW NEWS

Research Results · Conferences & Workshops · Publications

May/June 2020

Research Findings
Innovative Companies More Resilient to Crises

Supplement M&A Report
German M&A Index Declines Further

Economic Policy Analysis
Creating Incentives for Coronavirus Contact-Tracing App

Socially responsible behaviour has a considerable impact on the containment of COVID-19.

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Socially Responsible Behaviour Can Slow the Spread of the Coronavirus

Regions with a high level of social responsibility are seeing a slower spread of COVID-19 than regions with lower levels of social capital. This relationship between socially responsible behaviour and the spread of the virus was not only observed in Germany, but also in Italy, Austria, Switzerland, the UK, the Netherlands and Sweden. These are the results of a recent study conducted by a team of ZEW economists and researchers from the universities of Mannheim and Bonn.

As part of the study, the researchers analysed the relationship between social capital – a frequently used measure for social responsibility – and COVID-19 cases in seven European countries, i.e. Germany, Italy, Austria, Switzerland, the United Kingdom, the Netherlands and Sweden. The study provides important evidence regarding the relationship between individual responsibility and the coronavirus measures adopted by policymakers. It has been shown that the relationship between the spread of the virus and social capital becomes weaker for countries that imposed a lockdown. These results have important implications for the current debate on the importance of delegating more resposibility to the regional level when it comes to coronavirus policies. The findings suggest that regions with a greater sense of social responsibility could afford to have more relaxed restrictions on public life compared to regions with less social capital.

In the absence of medical drug treatments or vaccines against COVID-19, social capital comes to play a crucial role in containing the virus. Policymakers have been appealing to citizens' sense of responsibility and urging them to follow distancing and hygiene rules in order to stop the spread of COVID-19. All these rules cause restrictions and inconvenience for people. Whether or not individuals follow these rules partly depends on their social capital. In social sciences, this is usually measured in terms of voter participation, since individuals tend to participate in elections out of a sense of civic responsibility despite the fact that a single vote does not have a large impact on the election outcome. Regions with low voter participation rates are therefore considered to have less social capital. This relationship has also been observed for alternative measures of social capital like blood and organ donation rates, and volunteer work.

Regions with more social capital recorded a slower growth in the numbers of COVID-19-related deaths

Using econometric models, the authors of the study investigated the relationship between the amount of social capital on a regional level and the number of COVID-19 cases recorded in all seven European countries. The employed statistical methods allow controlling for alternative regional economic and social explanatory factors like the gross domestic product, population, economic sectors and medical infrastructure. In addition to comparing COVID-19 cases in seven European countries, the researchers also closely examined the developments in Italy. Firstly, they found that social capital is related to the number of coronavirus cases and COVID-19-related deaths. While the number of infections was found to have been initially higher in regions with more social capital, as information on the virus spread, high social-capital areas started to show a slowdown in cases and recorded a slower growth in the numbers of coronavirus-related deaths. Moreover, the researchers observed that social capital does in fact have an impact on individual behaviour. Using anonymised location data from mobile operators, the study found that Italians living in regions with more social capital significantly reduced their movement compared to those living in regions with less social capital already before the national lockdown was in force.

As a result, investment in social capital formation could be an important insurance against similar future pandemics in the longer term. According to the study's findings, policymakers should focus not only on the health care system but also on building up social capital in order to be well prepared. Possible starting points are local community programmes to increase social interactions, which can lead to increased cooperation and pro-social behaviour.

The study can be downloaded at: *www.zew.de/PU81710-1*

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Innovative Companies Are More Resilient to Crises and Less Prone to Cut Employment

The economic consequences of the coronavirus pandemic will most likely force companies to reduce spending on research and development (R&D). However, experiences from past recessions show that innovative companies are significantly more resilient and less likely to lay off workers than companies that do not engange in innovation activities. The current coronavirus crisis has required many companies to come up with creative solutions for products. They have, however, had fewer opportunities to cooperate with external partners than they had in past crises. This will most likely make conditions for company investments in R&D more difficult, especially in light of the fact that their own R&D workers currently have to work from home. These are the results of a recent ZEW policy brief published by ZEW Mannheim and the AIT Austrian Institute of Technology in Vienna.

Numerous preliminary national statistics show that COVID-19 has pushed many European states into a deep recession. This will most likely also reduce the companies' willingness to invest in R&D and limit their ability to bring new products and services to the market. Economic research has, however, shown that R&D is a key driver for growth and, as such, vital for economic recovery after the crisis. This engine of growth is currently at risk.

Previous recessions have also shown that crises do not affect companies equally. During the financial and economic crisis of 2008/09, for instance, those who suffered most were companies engaged in international trade. For Germany, it can therefore be expected that the innovation activities of export-oriented companies will be particularly hard hit by the current coronavirus crisis.

Liquidity constraints limit R&D investments

Furthermore, small and medium-sized enterprises are more likely to face liquidity and funding constraints as a result of economic crises. Larger Companies, on the other hand, have more internal financial resources and better access to lending markets. It is to be welcomed that governments of several European countries have adopted support measures for businesses. If the crisis continues for a longer period of time, companies will most likely run into liquidity constraints. This will in turn limit their ability to invest in research and development.

While most companies in Germany adjust their R&D expenditure according to the economic cycle and reduce R&D spending during recessions, some increase them in a counter-cyclical way.

During the financial crisis of 2008/09, approximately 34 per cent of German companies showed this behaviour. As a result, innovative companies were better able to cope with the consequences of the recession and, for example, did not have to cut as many jobs as companies that do not or only rarely engage in innovation activities.

R&D requires close cooperation and exchange

As a matter of fact, the coronavirus crisis has forced many businesses to develop new business models at short notice, like in the gastronomic sector, in delivery services and in many other sectors by offering new digital services. However, R&D is a collaborative process that requires the cooperation and steady exchange of several people, in addition to the use of technical facilities such as laboratories and workshops. Working from home thus hinders R&D activities. While the current crisis leaves more time for creativity, research facilities and materials might be less accessible, as well as cooperation partners from other companies and universities. These circumstances, which set COVID-19 apart from earlier crises, make it difficult to transform this creativity into new products. Therefore, less counter-cyclical innovation activity than in the financial crisis of 2008/09 is most likely to be expected.

As potential policy measures, the authors of the ZEW policy brief suggest direct and indirect financing instruments, which can help particularly small and medium-sized enterprises to overcome liquidity constraints for innovation projects and stabilize economic expectations. In this current crisis, however, the underlying problem is the restriction on economic life. When social and economic life returns back to normal, additional financial resources may be necessary to prevent companies from abandoning their innovation activities for good, which must be the aim of innovation policies. This kind of funding should be targeted at small and medium-sized firms in particular.

The innovation activies of companies are the result of a long-term accumulation of knowledge and skills. Even if the current crisis will be overcome faster than expected, adverse effects on companies' innovation activities can still arise after many years.

The ZEW policy brief is available to download at: *www.zew.de/PU81633-1*

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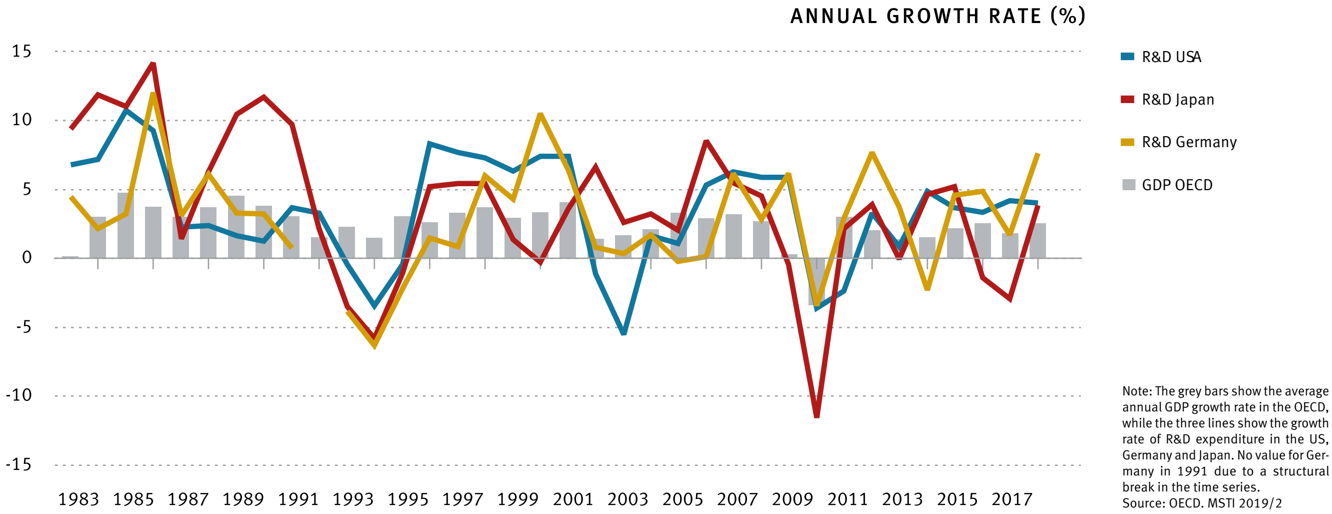
ANNUAL GDP AND R&D EXPENDITURE GROWTH RATE OF BUSINESSES IN OECD COUNTRIES, 1982 – 2017
AT CONSTANT PRICES IN 2010, USD PURCHASING POWER PARITIES



Note: The grey bars show the average annual GDP growth rate in the OECD, while the three lines show the growth rate of R&D expenditure in the US, Germany and Japan. No value for Germany in 1991 due to a structural break in the time series.
Source: OECD. MSTI 2019/2

IN THIS ISSUE

In order to have full effect, more than two-thirds of the population would have to use the contact-tracing app.

Photo: ©istockphoto.com/ LeoPatrizi

Contact-Tracing App: Creating Incentives for Fast and Widespread Adoption

Given that the only possible measure for effectively combating the coronavirus is currently the early isolation of infected persons, a contact-tracing app would make keeping track of chains of infection much easier. This kind of an app has the potential to make the mostly manual work of health authorities scalable, which would be especially useful in the event of a second wave of infection. Early isolation of infected persons indicated by the app could reduce the need for extensive restrictions on movement and contact. In order to have full effect, though, more than two-thirds of the population would have to use the app. Such an app has already been available in Singapore since mid-March 2020, but so far only one in four people use it. How, then, can a significantly higher proportion of active users be achieved in Germany?

The development of an app for Germany has been rough so far, but finally, Deutsche Telekom and SAP will be implementing it. The app will be based on Bluetooth interfaces provided by Apple and Google. Using the app will not be mandatory, though. People will have to be convinced of its benefits, which appeals from policymakers could facilitate. The goal should be to make this app the fastest and most widespread app in history. That might sound presumptuous, but an app that reaches two-thirds of the population has in all likelihood never existed. Almost every smartphone owner would have to install it.

The current willingness to install the app, which has been proven by surveys, seems to be quite high. However, expressed preferences and actual action often differ. Furthermore, the dynamics of public debate in recent weeks indicate that data protection and state surveillance concerns could quickly shift public opinion. These concerns must be addressed in a constructive and forward-looking manner.

Successful apps are usually designed in such a way that inviting more users is very easy, playful, or even has concrete advantages – all for the sake of the rapid and self-reinforcing growth of its userbase. Neither Germany's government bodies, nor companies such as Deutsche Telekom or SAP have practical experience in creating such dynamics of adoption. However, a patent remedy doesn't exist anyway. Rather, steep adoption curves are usually the result of many iterations in which different hypotheses regarding product design and distribution are tested on users empirically. This model should also be employed in the distribution of the contact-tracing app. The technical and organizational prerequisites must be created for that purpose. That includes political support for broad experimentation, which may require a lot of persuasion.

Economists can make valuable contributions to formulate hypotheses for fast and widespread adoption of the app. This particularly applies to economists conducting research on digital platforms and the app economy, as well as behavioural economists. They have long been concerned with how such adoption dynamics can be created and how incentives can help to do so. In this context, incentives have to be understood not only in terms of monetary benefits but also social recognition. While the cloud storage service Dropbox initially promised additional storage capacity for customer acquisitions, the Q&A forum 'Stack Overflow' encourages helpfulness through virtual rewards. Although not all of these examples are directly applicable to contact tracing apps, they do provide a basis for forming hypotheses. It should also be kept in mind that different population groups could react differently to incentives, and that the public spirit should not be weakened but rather strengthened by incentives. However, only field experiments will ultimately bring clarity. The expected high number of users for the app and the nature of easily modifiable software would allow many experimental interventions in a short period of time. After successful tests, the respective interventions could be rolled out more widely.

Academics and practitioners in digital economics, as well as behavioural economists, should be involved in the formulation and testing of the hypotheses. This also applies to other social sciences. Many relevant players are already active on Twitter. They are invited to discuss this matter further under the German hashtag *#AnreizeGegenCorona*.

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A longer version of this piece initially appeared in the German economics magazine "Wirtschaftsdienst".

M&A REPORT

German M&A Index Declines Further

The number of mergers and acquisitions (M&A) involving German firms continues to decline for the second year in a row. In the second half of 2019, the ZEW-ZEPHYR M&A Index – established in 2005 to measure M&A transactions involving German companies – recorded its lowest levels. In August 2019, the index dropped to 59 points, before showing signs of recovery in the beginning of 2020. The twelve-month moving average highlights the persistency of the index's negative trend, which can be traced back to summer 2018.

This decline in M&A activities would have been even more pronounced if there had not been three major takeovers in the past six months: One of the biggest M&A deals in the German energy sector materialized in September 2019. As part of E.ON's plan to merge with Innogy, a subsidiary originally founded by RWE in 2016, E.ON acquired RWE's stakes in Innogy for an estimated 37.8 billion euros, creating one of the largest energy suppliers in Europe. The deal – already announced in 2018 – was completed after the approval of the EU competition authorities.

Besides this big merger in the energy sector, the German chemical industry also experienced two of the largest M&A deals in the past six months. Merck KGaA acquired Versum Materials Inc., a leading electronic materials company based in the US, for approximately 5.8 billion euros. The deal is the second largest German M&A deal in the last six months and marks another step for Merck in becoming the leading supplier of electronic materials for the semiconductor and display industries. Another notable deal in the chemical industry was the acquisition of the polyamide division from Belgium-based Solvay by chemicals giant BASF for 1.6 billion euros in February 2020. Through this merger, the Ludwigshafen-based company has extended its polyamide competencies with engineering plastics.

In times of crisis, activities on the M&A market traditionally decline. Though the coronavirus crisis has created considerable uncertainty for M&A transactions, it is too early to tell how the pandemic will affect the performance of the M&A index.

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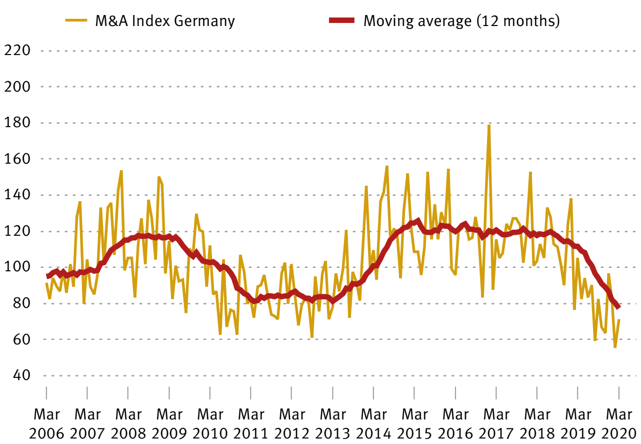
ZEW-ZEPHYR M&A-INDEX GERMANY



Source: Zephyr database, Bureau van Dijk, calculations by ZEW

The **ZEW-ZEPHYR M&A-Index** measures the number of M&A transactions completed in Germany each month. It considers only mergers and acquisitions by and with German companies. It does not differentiate between the country of origin of the buyer or partner. This means that both domestic and international buyer companies are considered, provided that the target companies are active in Germany. The M&A Report is a biannual publication issued by ZEW and Bureau van Dijk. It uses the Zephyr database to report current topics and developments in global mergers and acquisitions. The Zephyr database, which is updated on a daily basis, contains detailed information on over 1.9 million mergers and acquisitions, IPOs, and private equity transactions around the world.

BUREAU VAN DIJK
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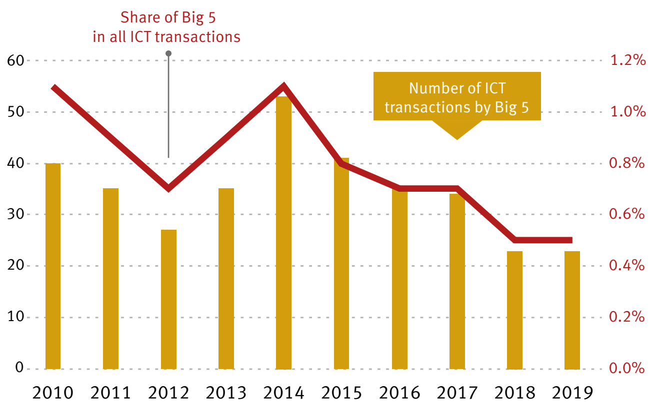
Are Takeovers by Big Tech in Decline?

The rise of big tech has been accompanied by large-scale takeovers in the ICT sector. Acquisitions of the Big 5 (Amazon, Apple, Facebook, Google and Microsoft) have made it to the news headlines several times in the last decade, with major deals including Google's 12.5 billion US dollar (11.2 billion euros) takeover of Motorola in 2012; Facebook paying 13.7 billion dollars (12.3 billion euros) for WhatsApp in 2014; and Microsoft acquiring LinkedIn in 2016 for 26.2 billion dollars (23.5 billion euros), to name but a few.

Despite the staggering size of these mega deals, it seems that acquisition activity of the Big 5 in ICT industries has been in decline since 2014. A look at the data indicates that the number of acquisitions made, as well as the relative importance of those acquisitions compared to other takeovers in the ICT sector, has declined, including the relative size of mega deals.

NUMBER OF ACQUISITIONS OF BIG 5 IN THE ICT SECTOR AND SHARE OF ACQUISITIONS OF BIG 5 IN ALL ICT TRANSACTIONS BETWEEN 2010 AND 2019



Source: Zephyr database, calculations by ZEW.

So are the times of takeovers in big tech over? Presumably not. Last year, Apple's CEO Tim Cook claimed that his company acquired up to 25 companies in the first half of 2019. This amounts to acquiring a new company almost every week. Cook said that Apple did not publicly announce most of these deals and that the companies involved were too small to be considered by the Federal Trade Commission (FTC) and other regulators. Many of those acquisitions are targeted towards a startup's human capital, instead of products or assets. These so called 'acqui-hires' typically involve paying a sizeable amount to the hired employees, paying out investors and debtors, and eventually shutting down the startup's original operations. When not announced, these deals happen under the radar and are unlikely to be reflected in the data.

This conduct has spurred a discussion among antitrust authorities and other competition experts to enforce antitrust regulation on big tech. The tech companies argue that their takeover activity is primarily a means to acquire talent and intellectual property, which should result in better and more innovative products. Competition authorities are concerned that rather than to hire talent, big tech companies use acquisitions to shut down competitors early. These 'killer acquisitions' are considered to stifle future competition, resulting in adverse effects for consumers, such as reduced data security.

The FTC has announced to review last decade's merger cases of the Big 5, requesting access to detailed information on hundreds of small-scale acquisitions. It made clear that if the study reveals that some transactions were problematic, it had all options on the table, including initiating enforcement actions with those deals. Meanwhile, antitrust regulators in the EU are planning their own enquiry into big tech, with now almost a third of all ICT takeovers of the Big 5 taking place in the EU and the UK.

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Chinese Firms Dominate M&A Deals in the Automotive Industry

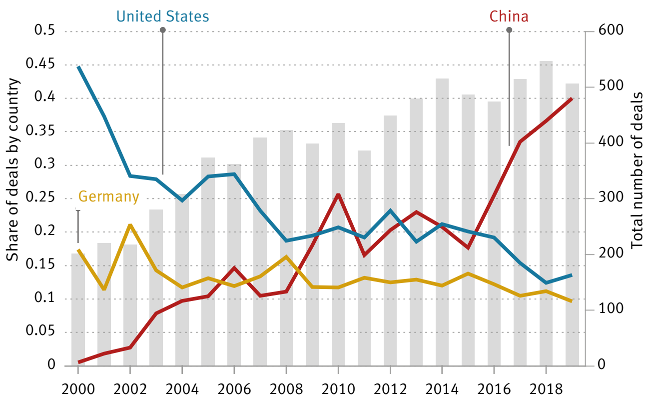
The past decade has witnessed many fundamental changes in the automotive industry: the emergence of different technologies such as electric vehicles and self-driving technology, as well as tougher environmental standards and a declining demand for new cars. These industry dynamics may also be the reason for the 27 per cent rise in M&A activities between 2009 and 2019.

One of the largest deals took place in 2015 and involved the German auto parts supplier ZF Friedrichshafen AG and the US TRW Automotive Holdings Corp. The deal is worth around 12 billion euros and created the second largest auto parts supplier, just behind the German engineering and technology company Robert Bosch GmbH.

China is biggest market for electric vehicles

The rise of China's economic impact is observable in the automotive industry. In 2019, almost 40 per cent of the deals involved Chinese firms. It might not be accidental that these dynamics occur in parallel to the rise of electric vehicles. In 2019

M&A IN THE AUTO INDUSTRY



Source: Zephyr database, calculations by ZEW

China was the biggest market for electric vehicles, with approximately 1.2 million cars sold, mainly by Chinese manufacturers such as BAIC and BYD. In comparison, only about 0.6 million electric vehicles were sold in Europe, which is the second biggest market.

China is also the largest domestic manufacturer of electric vehicles, with approximately 80 Chinese brands and a total of over 200 models. Chinese firms were involved in about 58 per cent of the deals related to electric vehicle technologies. While Chinese automotive companies are still facing difficulties in the production of internal combustion engines, which lowers their global competitiveness in that segment, the growing demand for electric vehicles and related components may pave the way for China's leadership in the future.

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Have M&A Activities in the European Energy Sector Passed Their Peak?

Few sectors have been subject to as much regulatory scrutiny and change as the European energy generation sector in recent years. The energy generation sector encompasses firms whose core business relates to the generation and transmission of energy sources (such as gas and electricity) used by businesses and households. With increasing pressure to focus on renewables and rising consumer awareness of sustainable energy needs, the firms in the industry face a variety of key trade-offs. Maintaining affordable energy prices is a key priority, while regulators and consumers are setting incentives to transition to more sustainable business models and to phase out environmentally harmful capacities. The competitive pressures entailed in this changing regulatory environment have led to a flurry of M&A activity amongst the affected companies in recent years. Between 2005 and 2017, the EU energy generation sector maintained a steady average of slightly more than 150 completed deals per year, on average accounting for a total deal volume of almost 52 billion euros. However, the volume of M&A activity has noticeably declined since 2017. In the two years since, the number of deals completed dropped from over 160 in 2017 to just above 80 in 2019. While the combined volume of transactions rose between 2017 and 2018, the 12 billion euros recorded in 2019 marks a 15-year-low. While these trends deviate from long-run averages, it remains open whether they indicate that the sector has moved past its activity peak and will see continuously lower levels of M&A, or whether the industry is simply taking a break before returning to previous levels of activity.

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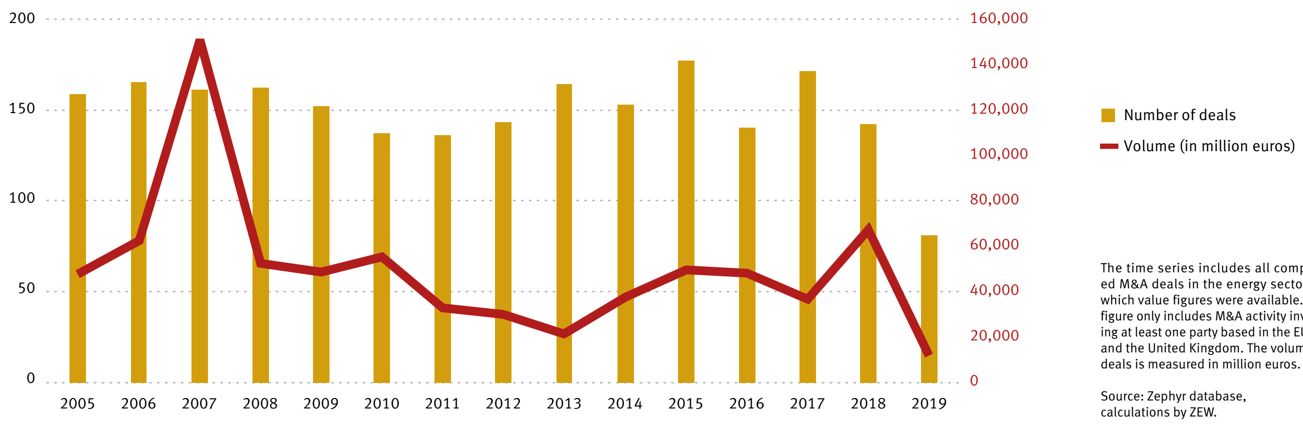
NUMBER AND VOLUME OF DEALS BY ANNOUNCEMENT YEAR



The time series includes all completed M&A deals in the energy sector for which value figures were available. The figure only includes M&A activity involving at least one party based in the EU-27 and the United Kingdom. The volume of deals is measured in million euros.

Source: Zephyr database, calculations by ZEW.

Q&A: What Does the New Junior Research Group IMES Work On?

"The Influx of Asylum Seekers Has Not Increased Criminality in Germany"

ZEW's Research Department "Labour Markets and Human Resources" recently created a new Junior Research Group, "Integration of Migrants and Attitudes Towards the Welfare State (IMES)". Its stated goal is to better understand the effects of immigration on the host country and the integration of migrants into the labour market. The group's head, Dr. Katrin Sommerfeld, tells us about the fruits of the research so far and what it plans in the future.

The Junior Research Group IMES focuses primarily on individuals seeking asylum in Germany. What are the economic effects of asylum migration?

We recently examined whether immigration has caused employment to rise or fall in certain sectors over the short term. Asylum seekers are not permitted to work during the first three months in Germany, but they do receive certain services free of charge – including interpreting, social work, security personnel and administration.

We have shown that employment rose in the short term in certain sectors because of the influx of asylum seekers. This is true of the services sector and sectors that manufacture non-tradable products such as the healthcare sector (which includes social work), construction and public-sector administration. The results further indicate that regions that have near full employment levels respond less flexibly to increases in labour demand.

And what do you see as the societal effects of asylum migration?

The influx of asylum seekers in Germany – which peaked in autumn 2015 – did not lead to a rise in criminality. This is notable because a large portion of the immigrants were young men, the cohort most likely to commit crimes.

For our research, we compared counties with differing shares of asylum seekers per 100,000 inhabitants and looked at the effects on various types of criminal offense: theft, assault, drug felonies and street crime. We took both the absolute numbers for each crime and the share of suspects who were foreigners or asylum seekers into account. We saw no rise in criminality, not even when we only considered the influx of young men seeking asylum.

Compared with other countries, the results show that most asylum seekers in Germany have a relatively easy time entering the labour market. We found indications that this setting may have contributed to there being no rise in criminality.

What are the regional conditions for the better labour market integration of immigrants?

Within Germany, there are regional differences in economic performance, settlement density and labour market integration policy that potentially facilitate or hinder the labour market integration of immigrants.

In this context, one question is whether a rural or an urban environment is more conducive for labour market integration. Relevant factors to look at include local support networks, accessibility to labour markets and public transportation, and local housing.

Another important factor is the presence of existing networks for ethnic groups, which usually abet integration, although they can sometimes pose obstacles.

What's on the group's agenda in terms of future research projects?

We first want to better understand the factors that facilitate and impede labour market entry of asylum seekers and of previous migrants.

Secondly, we want to look at the effects of integration on the German labour market. Many people automatically assume that the more job seekers there are on the German labour market, the more competition there is. At the same time, however, it produces winners as well. For instance, it is likely that additional job seekers will give existing employees a bump up in the medium term, which means performing more demanding tasks and receiving better pay.

Furthermore, what we still need to investigate is whether additional employees can balance out bottlenecks that are sometimes created by full employment levels or skilled worker shortages.


Photo: © Anna Logue Fotografie

Dr. Katrin Sommerfeld has been head of ZEW's Junior Research Group "Integration of Migrants and Attitudes Towards the Welfare State (IMES)" in ZEW's "Labour Markets and Human Resources" Department since 2019. She focuses on microeconometric research on issues surrounding migration as exemplified by the recent influx of refugees into Germany and Europe. Her research centres on feedback effects from immigration with respect to employment and wages on different groups on the German labour market: refugees, former migrants, and natives. In addition, she investigates further economic and societal consequences of the recent asylum immigration.

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Working from Home: Many Jobs in Germany Still Have Untapped Potential

A firm culture of presence has now been giving way to social distancing in many German establishments. Though the coronavirus crisis proves just how well working from home can function in Germany, it also shows the catching up that could be done. In almost all private sector establishments, the potential for employees to work remotely had not yet been fully realised before the crisis, especially in administrative professions, IT, and natural sciences. These are the results of a ZEW expert brief from ZEW together with the Institute for Employment Research (IAB).

The evaluation is based on data from the Linked Personnel Panel, comprised exclusively of private sector establishments with at least 50 employees subject to social insurance contributions. In the ZEW expert brief, the researchers show which jobs have the potential to be done from home, provided that the remaining technological hurdles are removed.

Before the coronavirus crisis, more and more professionals were working from home. Depending on the type of work, however, remote work use varied greatly, and the potential for it was not fully utilised, as the ZEW expert brief shows. In all the professional groups studied, it was found that more people could work from home, provided that the job was suited for mobile office work and the right technology was available. Especially for job types in which the proportion of those working from home was already quite high, such as IT, natural sciences, and commerce, there was still considerable room for improvement in terms of exploiting work-from-home potential. This is especially true for traditional office jobs, where up to 30 per cent of employees could additionally be working from home.

The researchers also point out that the kind of job activity plays a central role when making use of remote work options. For example, the majority of employees in the establishments surveyed worked in specialized jobs, with 23 per cent of all employees working at least occasionally from home. The proportion of employees with specialist or expert jobs who worked from home, however, was more than twice as high at 61 per cent.

Potential for remote work dependent on job tasks

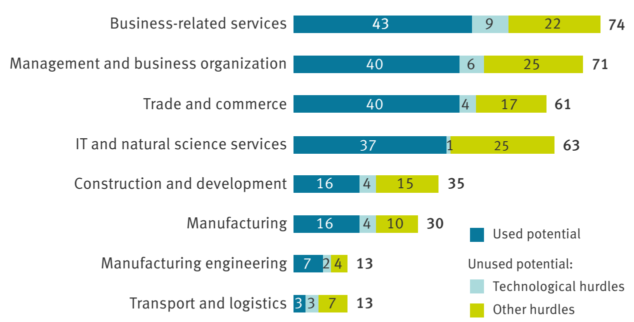
The scope and structure of activities in the various job types also determined the likelihood that the person could work from home. For example, a higher proportion of work with machines and equipment was associated with a lower home-office probability. Professions in the fields of construction, development, and manufacturing, which are mainly dependent on the operation of machines and systems for carrying out their work, all fall into this category. In contrast, occupations in business-related services, management, and business organisation and commerce showed comparatively high numbers of home-office-related activities.

In Germany, there is still a lot of untapped potential for remote work that will certainly be used more in the future. However, where a lot of work is done with machines and systems, the tech hurdles remain relatively high. This is also shown by recent developments. Measures such as the closure of production plants due to the coronavirus pandemic may have also had an effect on administrative jobs that can potentially be done from home. Nonetheless, dismantling technological hurdles such as providing hardware, software, and ensuring sufficient broadband connection would definitely help keep the German economy up and running.

Jun.-Prof. Dr. Susanne Steffes, susanne.steffes@zew.de

POTENTIAL FOR WORKING FROM HOME ACCORDING TO SECTOR, 2017

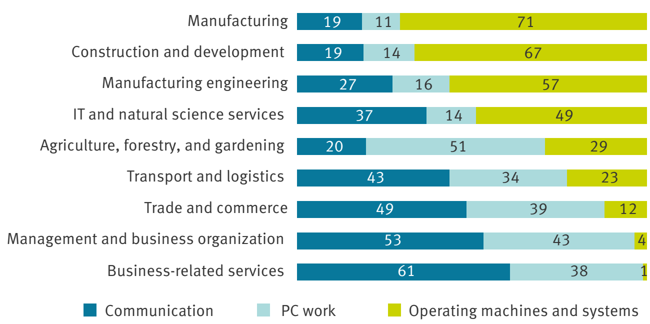
EMPLOYEE RESPONSES IN PER CENT



Source: Linked Personnel Panel 2017, own calculations. © IAB

SCOPE AND STRUCTURE OF DIFFERENT TASKS ACCORDING TO SECTOR, 2019

EMPLOYEE RESPONSES IN PER CENT



Source: Linked Personnel Panel 2019, own calculations. © IAB

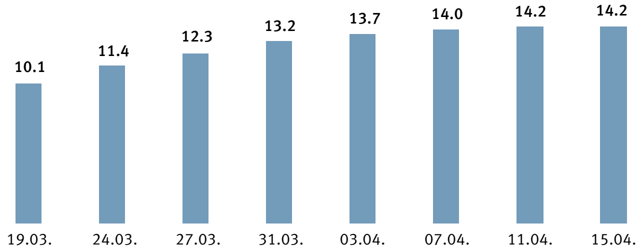
Start-Up istari.ai to Use AI for Company Analyses

The start-up company istari.ai, a spin-off associated with ZEW, developed an artificial intelligence (AI) system that analyses company information online in a high-frequency and fully automated manner. The company was founded by ZEW researcher Jan Kinne (jan.kinne@zew.de) from the institute's "Economics of Innovation and Industrial Dynamics" Department and David Lenz, a PhD student at Giessen University, as a result of a joint research project of ZEW and Giessen University, called TOBI, on web-based innovation indicators.

While manual research had still dominated the market for company information, the AI system named webAI searches company websites for relevant information with high frequency and fully automated. Currently, the founders are investigating the effects of the coronavirus pandemic on businesses in Germany by examining over one million company websites twice a week. In order to draw more in-depth and informed conclusions, they are currently working at full speed to expand the webAI. The founders have already successfully sold their system to other European countries. The response has been very positive so far, and the founders are optimistic that their start-up will take off further in the coming years.

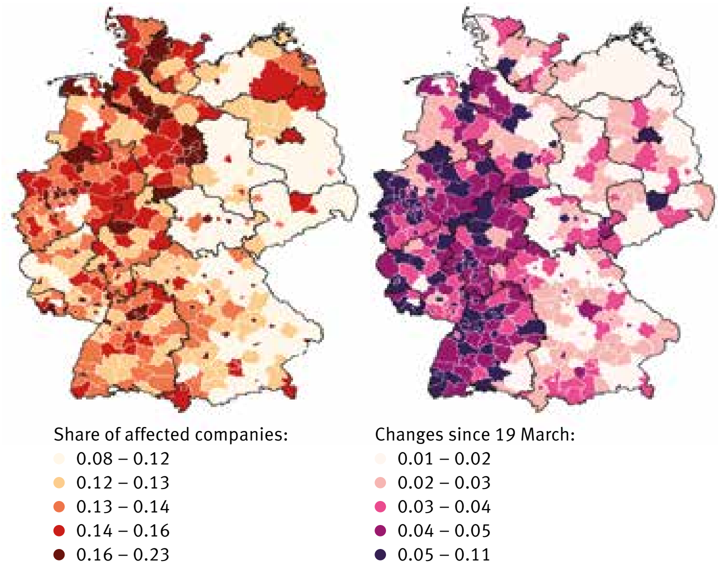
Watch a video with English subtitles on istari.ai and its founders: *https://youtu.be/pQm0OVrCXWc*

SHARE OF COMPANIES WITH AT LEAST ONE WEB REFERENCE TO THE CORONAVIRUS BY DISTRICT IN GERMANY (IN %)



Source: ZEW

DEVELOPMENT OF AFFECTED COMPANIES WITH AT LEAST ONE WEB REFERENCE TO THE CORONAVIRUS IN GERMANY



The maps show the share (left) and development (right) of affected companies with at least one web reference to the coronavirus by districts in Germany. Source: ZEW

Public Finance Conference on Local Public Economics at ZEW

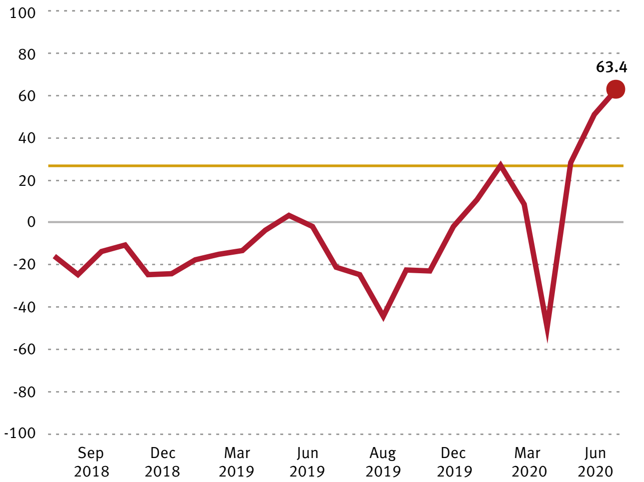
Being one of the first large economic conferences held during the coronavirus pandemic , this year's ZEW Public Finance Conference led the way in the digital sphere. On 8 May 2020, around 120 international researchers from different time zones came together in this virtual space to discuss the topic "Advances in Local Public Economics" as well as issues at the interface of public finance and political economy.

The online conference, which was jointly organised by ZEW and the Collaborative Research Center SFB 884 "Political Economy of Reforms", included a keynote speech by Daniel Sturm, professor of economics at the London School of Economics and president of the Urban Economics Association. In his speech, he shed light on the role of transport infrastructures for individual mobility and economic activity in metropolitan areas.

In four sessions, international researchers presented and discussed academic advances in local public economics, covering a broad spectrum of topics. In addition to presentations focusing on the considerations of policymakers regarding local public finance, the event also featured contributions related to the implications of public decision-making, including presentations on tax incidence, public debt and voter behaviour in local elections.

The organising team of the ZEW Public Finance Conference Photo: © ZEW

ZEW Indicator of Economic Sentiment: Expectations Continue to Improve



ZEW Indicator of Economic Sentiment for Germany, June 2020 Source: ZEW

In June 2020, the ZEW Indicator of Economic Sentiment for Germany increased for the third consecutive time. The indicator currently stands at 63.4 points, which corresponds to a rise of 12.4 points compared with the May result. The assessment of the economic situation in Germany has improved for the first time since January 2020, with the corresponding indicator currently standing at minus 83.1 points, 10.4 points higher than in the previous month. The renewed rise of the ZEW Indicator of Economic Sentiment as well as the more optimistic assessment of the current situation suggest that there is growing confidence that the economy will bottom out by summer 2020. The expected earnings for the individual sectors in Germany, however, still vary greatly. Earnings expectations are strongly negative for export-oriented sectors such as automotive and mechanical engineering, while forecasts are fairly positive for information technologies, telecommunications and consumer-oriented services.

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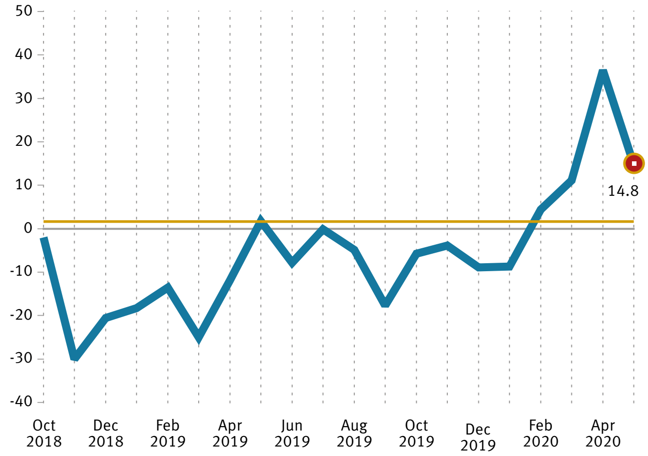
Chinese Economy: Decline in Expectations Reveals Persistent Uncertainty



Balance of the symmetrically weighted positive and negative assessments regarding the macroeconomic environment in China in twelve months. Survey period 11 May 2020 – 20 May 2020.
Source: ZEW/Fudan University

In the current May survey (11–20 May 2020), the CEP indicator falls by 21.7 points to a value of 14.8 points, largely reversing last month's 25.4-point increase. The CEP indicator, based on the China Economic Panel (CEP) in cooperation with Fudan University, Shanghai, reflects the economic expectations of international financial market experts for China on a 12-month basis. The average growth forecast for the second quarter of 2020 is currently only 0.5 per cent, after growth projections were still at 2.0 per cent in April. The forecast for the third quarter of 2020 was lowered from 4.2 per cent to 3.5 per cent. For the entire year of 2020, the survey experts are forecasting real GDP growth of only 2.1 per cent (previous month: 3.4 per cent). The fairly pessimistic outlook for economic development in the coming months is also reflected at the sector level and in the forecasts for China's key economic regions. Expectations regarding the development of real estate prices have also become largely negative.

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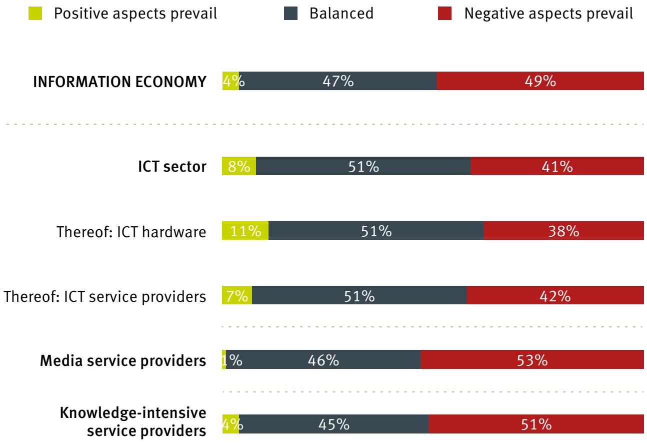
Many Companies in the Information Economy Dissatisfied with GDPR



Companies in the German information industry are frequently dissatisfied with the GDPR, which came into force in May 2018. Source: ZEW

Firms in the German information economy are mainly dissatisfied with the EU General Data Protection Regulation (GDPR), which came into force in May 2018. This is the result of a recent representative survey of about 600 companies in the information economy, conducted by ZEW Mannheim in March 2020. In half of the companies, the negative aspects of the new regulations on personal data protection predominate after the two-year period, while the positive aspects of the GDPR outweigh the negative ones for just under five per cent of companies. The introduction of the GDPR quite frequently complicated companies' regular business processes, leading to a high workload regarding the implementation of new requirements. More than half of the companies also reported additional costs for employee training and increased demand for external consultation. It was not all negative, though; 36 per cent of companies also reported that their processes had been reviewed and optimised.

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Competition in Times of Crisis

Margrethe Vestager, Executive Vice-President of the European Commission, has expressed concern about the "big differences" in state aid granted by the EU Member States in connection with the coronavirus pandemic. In particular, she fears that Germany's aid programmes are giving its companies an advantage over those in countries whose governments cannot afford similar levels of support.

But it's not that simple. After all, as Commissioner for Competition, she herself makes sure that competition is not harmed by such aid measures. The reality is that state aid may only go to companies that were financially viable at the end of 2019. Loans with a 100 per cent government-backed guarantee are capped at 800,000 euros and, in order to pre-empt state subsidized shopping sprees, large companies that receive aid may not acquire stakes larger than ten per cent in competitors. Moreover, in order to make a meaningful competitive analysis, it is not sufficient to simply compare the currently available aid programmes, as some of these programmes are not being fully depleted while others are being increased when necessary. Instead, it is more relevant to look at the amount of funds used. Finally, the European Investment Bank's pan-European guarantee fund ensures that companies in less wealthy countries still receive liquidity support.

But passing the state aid test does not necessarily mean that stimulus measures are competition neutral. Deployed properly, they can promote competition. The coronavirus crisis has made it more difficult for start-ups to secure financing and economists are worried that interest in start-ups will wane in the medium term, eroding the competitive stimulus they provide. The German government's two-billion-euro aid package for start-ups can provide some relief.

Competition can be critically affected if the federal government is selective with its support. The planned seven-billion-euro aid package for the Deutsche Bahn is no good news for the other competitors in the sparsely populated rail sector. The tender shoots of competition in the local, long-distant, and cargo traffic could suffer. But competition problems can be avoided, at least in part: earmarked public investment in rail infrastructure would not only benefit all competitors but also rail passengers. Moreover, financial support should either be temporary – as required by state aid regulations – and provide sufficient compensation for the public sector; or, if the aim is to strengthen equity, this should be done according to the criteria of the market economy operator test, i.e. at fair market conditions.

The negotiations on the nine-billion-euro support package for Lufthansa will also have consequences for competition: the Irish airline Ryanair, for example, has already announced that it will take legal action. In any case, Germany's aviation industry has not been very competitive after Air Berlin filed for bankruptcy. So this might be a good opportunity to create more competition. For a while now, the German Monopolies Commission has recommended granting competitors of Lufthansa and Eurowings more start and landing rights at German airports, e.g. through auctions. It is good, that also the European Commission takes this view. With airlines making deep schedule cuts, now is a good time to make competition in the sector more dynamic by granting rights – ideally, however, not only in Germany, but all over Europe.

President of ZEW, Prof. Achim Wambach, PhD

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