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A recent ZEW study finds that price differences are not the only reason for the much lower market share of electric cars. Photo: ©istockphoto.com/3alexd

Reluctance Towards E-Cars: High Costs Not the Only Barrier to E-Mobility

For longer distances, drivers use vehicles with internal combustion engines far more often than electric cars. This not only applies to privately owned cars but especially car-sharing ones, where the cost structure for both types of driving is the same for customers. Higher purchase prices and differences in running costs between electric cars and internal combustion engines are not the only reason for the reluctance towards electric vehicles, as behavioural and non-monetary factors are also likely to play a role. Everyday distances, though, are easily accessible with a standard e-car. This is the result of a recent study by ZEW Mannheim.

The study is in part based on the survey “Mobilität in Deutschland 2017” (“Mobility in Germany 2017”), conducted by the Federal Ministry of Transport and Digital Infrastructure. Researchers also use booking data from the years 2014 to 2016 from Flinkster, the largest car-sharing provider in Germany. A special feature of Flinkster car sharing is that the travel costs per driven time and distance are always the same for all offered engine types within a vehicle class, whether electric or combustion-powered. Because of this identical cost structure, observable differences in use between electric cars and internal combustion engines can’t be due to cost differences; rather, non-monetary factors in driving behaviour are at work here.

Even when taking current state subsidy premiums into account, for private car owners, e-cars are usually more expensive to buy. Yet the variable costs per kilometre are significantly lower than those of conventional vehicles due to the low price (per energy unit) of electricity compared to petrol or diesel. The cost structure alone therefore offers incentives to use e-cars just as much as conventional vehicles. As the study shows, private households drive their e-cars an average of 13,052 kilometres per year, which is about eight per cent less than for private cars with internal combustion engines. The higher mileage of conventional cars is mainly due to the heavy use of diesel cars.

In car-sharing services, on the other hand, the difference between electric cars and cars with internal combustion engines is even more pronounced: electric cars that were available for use all year round achieved only 21 per cent of the annual mileage of conventional cars. In addition to lower mileage per booking, electric cars are also booked less frequently than conventional vehicles at rental stations offering vehicles with both combustion and electric drive technologies. Researchers interpret the significantly lower use of electric cars in car sharing as price differences not being the only reason for the much lower market share of electric cars. Against the background of these findings, it is questionable whether an increase in subsidy premiums can help e-mobility achieve a breakthrough via additional demand.

Resistance to change and range anxiety as possibe explanations for lower use of e-cars

One possible explanation for the lower use despite the same costs is a status quo distortion, meaning that users much rather prefer the current state and are resistant to change. Another reason for the reluctance to invest in e-mobility could be the result of range anxiety, i.e. the fear of not being able to cover long distances in an electric car.

Range anxiety is unfounded, however, for the majority of the distances travelled, as the analysis of daily mileage of private vehicles and car-sharing data shows. Even with very unfavourable assumptions regarding the range and charging possibilities of e-cars, between 82 and 92 per cent of the daily trips made with internal combustion engines could, in principle, also be managed by electric vehicles. And with moderate assumptions, the proportion is even close to 99 per cent. It is therefore important that political decision-makers, car manufacturers, and car-sharing providers are able to dispel drivers' concerns. Attractive loan offers for first-time e-car users could be helpful, for example. Another important task for policymakers is to expand the public charging infrastructure since the availability and rapid usability of charging stations would definitely help reduce range anxiety.

Driving excursions with particularly high mobility requirements, such as holiday trips, can pose a challenge for winning over potential e-car users. Currently, electric cars can only cover such long distances when there is plenty of time and planning going into the trip. For people or households with only one vehicle, this would be reason enough to decide against a car with electric drive. Possible solutions could be to offer e-car buyers vouchers for long-distance rail travel, or to promote the temporary lending of vehicles with internal combustion engines under special conditions, which would make the first e-car purchase less daunting.

The study is available to download at: *www.zew.de/PU81737*

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Long-Run Consequences of the COVID-19 Pandemic on Social Inequality

The COVID-19 pandemic is seriously affecting social inequality, the long-run distribution of resources, and equality of opportunity on several dimensions. Primarily, the interplay of education, income, and health will eventually define the impact of COVID-19 on future generations. Presently and in the near future, suitable strategies will have to be enacted to control the outbreak and save lives, while preventing a social crisis in the long run by safeguarding the interests of vulnerable families.

As one of the many repercussions of the COVID-19 pandemic, the long-run distribution of resources and equality of opportunity are seriously challenged on several dimensions. One of the most severe consequences of the current situation, and of the mitigation strategies that governments have been forced to adopt to control the outbreak of the disease, is the intensification of economic and social inequality. One important channel of these long-run effects of COVID-19 is the intergenerational transmission of inequality. A look at the existing evidence about how parental resources influence the achievements of their children can help to evaluate on which dimensions the pandemic magnifies existing inequalities.

First, the most obvious channel is the learning loss associated with school closures. In April 2020, schools were closed nationwide in 189 countries, a situation affecting more than 1.5 billion learners worldwide. Several studies have shown that reduced instructional time lowers academic achievement. As evidenced by studies measuring the educational gaps after summer vacations, it is likely that this situation mostly affects children from disadvantaged backgrounds. These children have fewer educational opportunities beyond school, while their parents are less prepared to support them in the educational process at home. Furthermore, the capabilities of schools to facili-

In April 2020, schools were closed nationwide in 189 countries, a situation affecting more than 1.5 billion learners worldwide.

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tate learning from home are uneven and depend on the available educational tools and resources, public spending on education, as well as on the availability of computers and internet. As a consequence, it is likely that the human capital loss will be disproportionate across the distribution, leading to stronger educational and income inequality in the future.

Another potential channel is parental job loss as a result of company shutdowns. While most high-skilled workers are able to work from home and are not suffering any wage reduction, the same is not true for low-skilled and manual workers that might have lost their jobs during this period. Consequently, families at the bottom of the distribution are suffering a substantial reduction in their economic resources and are facing a very stressful situation characterized by strong uncertainty. These negative shocks will have a deep impact on future generations, especially in countries with high monetary costs of education, and those with strong disparities in quality between public and private schools. In addition, job loss of the chief earner has been shown to induce other members of the household to increase their labour market participation. Older children in particular could therefore drop out of school to enter the labour market as soon as possible, leaving school without a valid qualification.

Social isolation and school closures could have detrimental effect on children’s health

Health inequality is a further channel affecting the intergenerational transmission of human capital with possible long-run repercussions due to the pandemic. Depending on the quality and universality of the national health care system, mortality might be different by socioeconomic groups. Also the likelihood of infection depends on an individual’s ability to isolate and reduce social contact. This is possible when working from home, but not for many other jobs, and might be next to impossible e.g. for multigenerational families. Furthermore, social isolation and school closures could have a dramatic impact on health inequality, especially among children, as prolonged school closures and home confinement can have a detrimental impact on children’s physical as well as mental health.

Addressing the possible intergenerational effects of the pandemic with proper public policies and interventions will be crucial for mitigating the dramatic impact that the current situation could have on our societies in the long run. As soon as a school reopening will be safe, one possible measure to reduce the learning loss could be to shorten school vacations to make up for the missed instructional time. Cost-benefit analyses of school closures during flu epidemics estimate that this can be an efficient way to mitigate the outbreak while keeping the long-run costs as low as possible. This could also alleviate parents from childcare burdens and give them additional time to make up for the possibly suffered income losses.

An additional, possibly effective strategy to close the educational gaps while strengthening social cohesion could be to implement collaborative learning among pupils in the classrooms. In any case, enacted post-pandemic measures and policies should be chosen judiciously and under consideration of scientific knowledge. Suitable further strategies will need to be enacted to control the outbreak of COVID-19 and save lives, while safeguarding the interests of vulnerable families. This will be crucial for preventing a social crisis in the long run.

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A longer version of this article was published on the UNDP page on 9 June 2020.

IN THIS ISSUE

Disproportionate Purchase of High-Debt Country Bonds Even Before COVID-19

Even before the coronavirus pandemic, Eurosystem central banks were increasingly buying disproportionately large amounts of bonds issued by highly indebted euro area countries. In addition, the rules of the purchase programmes have been continuously relaxed since 2015. These are the findings of a study on the ECB's sovereign purchase programmes, conducted by researchers of ZEW Mannheim with the support of the Brigitte Strube Stiftung.

The COVID-19 pandemic and the deepest recession in the post-war period are currently providing the ECB with convincing arguments for handling its new purchase programme PEPP very flexibly. At present, the outbreak of panic on the bond markets must be prevented by all means. However, this does not justify the fact that the old PSPP purchase programme had already increasingly violated its own rules by the end of 2019.

In a first step, the study examines how rules of the Public Sector Purchase Programme (PSPP) and the Pandemic Emergency Purchase Programme (PEPP) evolved over time. For the PEPP activated in March 2020, important rules of the PSPP were overridden on the grounds that the coronavirus-induced recession poses extraordinary challenges. But also in the PSPP, which started in 2015, initially very strict limits had been increasingly become laxer even before the COVID-19 crisis. This applies to eligible issuers, maturity restrictions, yield restrictions, as well as issue and issuer limits that were still in force at the beginning of the PSPP. The rule that the Eurosystem shall base its allocation of bond purchases according to the country's share in the ECB capital key was also increasingly relaxed.

In 2020, the PEPP led to a far-reaching relaxation of the remaining rules. The Eurosystem now even accepts the purchase of more than one third of all bonds issued by a single issuer, which gives the ECB a strategic blocking minority in future creditor negotiations.

The empirical analysis shows that, even before the outbreak of COVID-19, the allocation of bond purchases already deviated clearly from the capital key in favour of the highly indebted countries France, Belgium, Italy and Spain. For each of these four countries, the stock share held by the Eurosystem increasingly deviated from the ECB capital key between 2015 and 2019. Since the beginning of the coronavirus crisis, the disproportionate purchase of Spanish and Italian bonds has increased dramatically, even in the old PSPP programme, with Italy's share of PSPP purchases between March and May exceeding the country's capital key by 13 percentage points. As a result of the growing asymmetry in the ECB's bond purchases, the Eurosystem's stock holdings have come to vary considerably relative to the countries' economic sizes. While the Eurosystem already holds Italian bonds amounting to almost 25 per cent of Italy's GDP in 2019, cumulated purchases of Dutch bonds are only about 15 per cent of the country's GDP.

The study concludes that, before the current crisis, bond purchase programmes would have increasingly bordered on illicit monetary financing of governments. Such large-scale and increasingly asymmetric government bond purchases by central banks in the eurozone may be justified in times of crisis, but they are no longer compatible with EU law once the coronavirus-induced recession is over. The ECB cannot and must not solve the problem of over-indebted euro states in the future.

Download the ZEW expert brief at: *http://ftp.zew.de/pub/zew-docs/ZEWKurzexpertisen/EN/ZEW_Shortreport2011.pdf*

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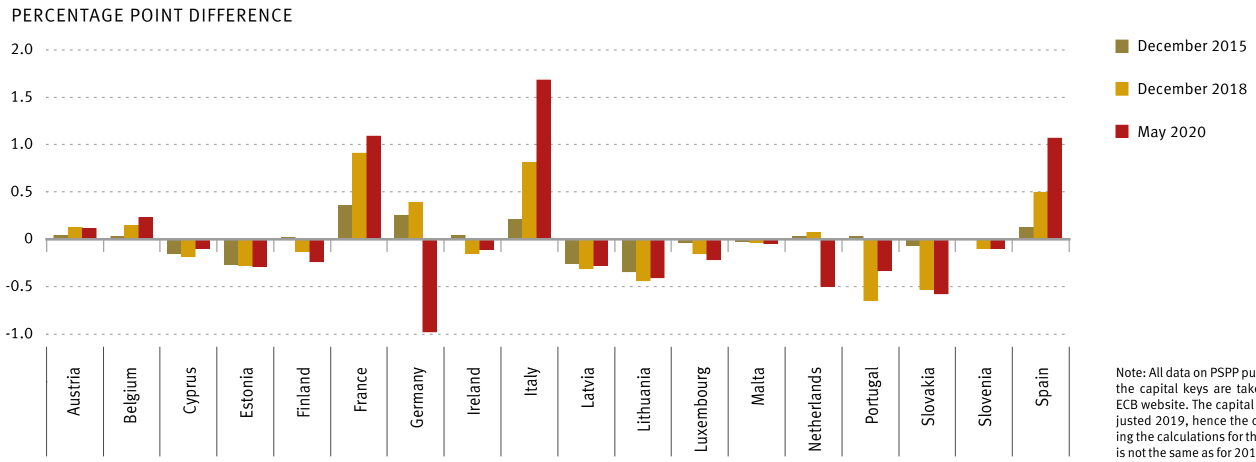
COMPARISON OF COUNTRY PSPP STOCK IN TOTAL STOCK AND ECB CAPITAL KEY



Note: All data on PSPP purchases and the capital keys are taken from the ECB website. The capital key was adjusted 2019, hence the one underlying the calculations for the year 2020 is not the same as for 2015 and 2018.

Lockdown measures to contain the coronavirus could reinforce traditional gender roles in families.

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Working from Home During the Pandemic Impacts the Household Division of Labour

The lockdown measures to contain COVID-19 could reinforce traditional gender roles in families. While working from home allows mothers to increase their working hours, they also have to assume more household and child-caring responsibilities, especially if fathers are unable to work from home. This is likely to be the case in most families as women carry the bulk of these tasks. In only about 30 per cent of the households with children, the father has a more flexible working arrangement than the mother and therefore has more time for childcare and household responsibilities. These are the results of a ZEW expert brief from ZEW Mannheim.

The COVID-19 pandemic has brought about massive changes in the labour market. Whereas in 2018 only 12 per cent of employees were working from home on a regular basis, this share rose to 35 per cent in April 2020, with 26 per cent of employees even working exclusively from home.

As a result of the crisis, working from home has become more common. In the long term, employers are likely to develop a more positive attitude towards remote working arrangements, which will then become more available to workers. Both companies and employees are becoming more familiar with mobile work and realizing that it works. In the future, it will be easier to work from home since companies have had to make the necessary investments and adapt their processes due to the crisis. It is therefore likely that companies will increasingly offer arrangements that replace the need to carry out tasks and meetings at the workplace. Once working from home becomes more widely available, this will allow mothers to increase their working hours.

Mothers likely to take on more household responsibilities than fathers during the pandemic

However, the long-term effects will also depend on the extent to which child-caring responsibilities, which have increased due to the COVID-19-related closure of schools and childcare facilities, are shared between mothers and fathers. To investigate this question, the researchers assessed the flexibility of the parents' work arrangements during the pandemic. In this regard, professions deemed essential during the crisis and those with tasks that can only be carried out onsite offer less flexibility. Conversely, individuals who can perform their job fully from home or who are out of paid employment, including those employed in sectors that had to close because of COVID-19, are considered as very flexible. Overall, the occupational flexibility of parents, together with the usual division of tasks at home before the crisis, suggest that women are more likely to take on additional childcare responsibilities in the majority of families.

In about 28 per cent of households, mothers had more flexible working arrangements than fathers and were therefore able to take on more child-caring and household responsibilities during the coronavirus crisis. In 24 per cent of families, the parents' occupations were comparable in terms of flexibility. However, it is likely that mothers also spend more time on childcare and housework than fathers in these households, since the domestic division of labour in families with children below the age of 13 had already been unequal before the pandemic. Even in families where both parents work, women spend three times as much time on childcare activities and twice as much time on household chores as fathers. For 85 per cent of these couples, the findings indicate that women work less hours, and for more than 60 per cent of couples, they suggest that mothers earn lower hourly wages.

However, 40 per cent of mothers and only 23 per cent of fathers had professions deemed essential during the crisis. In almost 30 per cent of households with children below the age of 13, mothers were less flexible jobwise than fathers. In these households, COVID-19 could help reverse traditional gender roles. If fathers take on more child-caring and household tasks, this could bring about positive consequences for women. However, this is not the case for a considerable share of families. If the lockdown reinforces traditional gender roles, women will most likely benefit less from the increased use of mobile work arrangements after the coronavirus pandemic, which will entail negative consequences for their long-term career opportunities.

Download the ZEW expert brief at: *www.zew.de/PU81735-1*

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The majority of households in Germany are in favour of linking economic and climate policy during the coronavirus crisis.

Climate Protection Remains Central Issue During Coronavirus Pandemic

Climate protection and climate change remain important issues during the coronavirus pandemic. In a recent survey, more than 90 per cent of German households stated that the importance of climate change has not changed or has even increased since the beginning of the year. The survey was funded by the Federal Ministry of Education and Research (BMBF) and carried out on behalf of the RWI – Leibniz Institute for Economic Research, as well as ZEW Mannheim and other cooperation partners.

Climate protection remains a central issue for people even during the coronavirus pandemic, as a recent survey of more than 6,000 household in Germany shows. This is somewhat surpising, especially since a large number of households are reporting financial losses. According to the survey, the respondents are in favour of measures that will limit the economic consequences of the pandemic but at the same time help to achieve climate targets. Views on climate policy are also remaining stable during the pandemic.

Only 0.6 per cent of those questioned stated they had been infected with the coronavirus and that this was verifiable. About half of the households suffered financial losses, however, and just under eight per cent of those surveyed even reported large or very large losses.

Measures to support the economy should also benefit environmental protection

Climate change nonetheless remains an important issue for 70 per cent of the people surveyed. Only six per cent of the respondents believe climate change has lost importance since the beginning of the year. About 23 per cent believe that it has gained importance in recent months.

A clear majority of those surveyed (63 per cent) are in favour of linking economic and climate policy during the coronavirus crisis, i.e. measures to support the economy should at the same time help to achieve climate targets. Just under 37 per cent believe that social justice is even more important in this context than climate change, while only around 28 per cent of households think that reviving the economy is the top priority and that all other goals, including climate protection, should be subordinated to this goal.

Approximately 62 per cent of those surveyed say that public investments should only be made if they contribute to reducing CO_2 emissions. When it comes to purchasing premiums for fuel burners, the German federal government can get confirmation from the results of the study; a drive-independent purchase premium for cars is supported by only nine per cent of those surveyed. In contrast, 34 per cent of the respondents have voiced support for a purchase premium for cars with climate-friendly drive systems.

A reduction in electricity prices was also met with great approval: 69 per cent of those surveyed were in favour of a price reduction e.g. in the form of a lower EEG (German Renewable Energy Sources Act).

Representative survey among more than 6,000 households

The survey took place in the period between mid-May and mid-June 2020 and is part of the BMBF-funded research project called "Eval-MAP 2". It was conducted by the market research institute forsa on behalf of RWI in Essen, ZEW Mannheim, the Leibniz Institute of Ecological Urban and Regional Development (IÖR) in Dresden, and the University of Potsdam, with more than 6,000 households having taken part in the survey. The respondents belong to the forsa household panel, which is representative of the German-speaking population.

The study can be donwloaded at: *https://www.zew.de/fileadmin/FTP/gutachten/RWI_ZEW_ImpactNote_KlimapolitikwaehrendCoronaPandemie2020.pdf*

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Better Reconciliation of Work and Family Life Reason for Higher Birth Rate in France

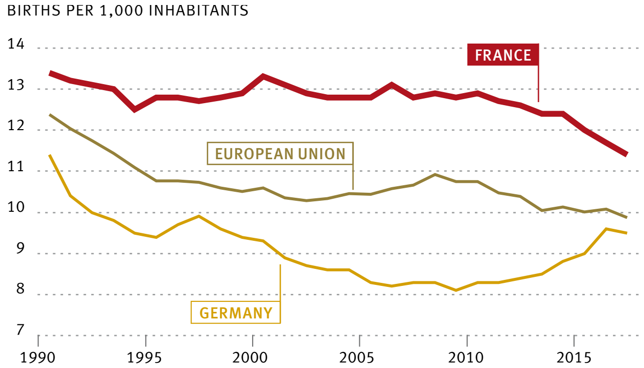
In the 1990s and 2000s, the birth rate in France was about 50 per cent higher than in Germany. At the same time, France had a higher proportion of women in full-time employment. While France invested a lot of money in childcare, women in Germany often had to choose between having children and continuing their careers. High-earning women with a university degree in particular were found to have fewer children in Germany and were more likely to postpone family planning. This is the result of a recent study by ZEW Mannheim in cooperation with the Copenhagen Business School and the University of Strasbourg.

The study is the first to use comparable detailed information on the employment histories and birth registers of more than 270,000 women from Germany and France. This extensive data pool makes it possible to take cross-national quantitative analyses to a new level.

The researchers looked at women of childbearing age in the period between 1994 and 2007 and found that women in France were, on average, not only less likely to remain childless but also more likely to have large families consisting of three or more children. Striking is the comparatively sharp decline in the share of mothers with two children in Germany – from 36.1 per cent in the oldest birth cohorts to merely 14.5 per cent in the youngest birth cohorts. The proportion of women with two children in France, on the other hand, remained almost the same at over 30 per cent.

The analysis further showed that, at the time their first child was born, almost half of all women in Germany (47 per cent) and France (45 per cent) were not working. In Germany, this figure rose to 65 per cent and 74 per cent for the second and third child, respectively, while in France it was only 48 per cent and 58 per cent, respectively. These numbers show at what point it was easier for French women to remain active in the labour market after the birth of their child, and to start working again between births. In Germany, however, it is more common to have another child during parental leave.

AVERAGE BIRTH RATES



Source: World Bank, 2019

German women have fewer childcare options than French mothers

The more difficult it is to reconcile work and family life, the more mothers have to make sacrifices in their careers. For mothers, these so-called opportunity costs include loss of earnings, the interruption and potential prevention of their careers and the loss of work-related knowledge and skills. Such economic considerations are particularly relevant for well-educated women, and those with high incomes. Due to the poorer childcare coverage, these costs were particularly high in Germany. The influence of opportunity costs on the birth rate was about twice as strong in Germany as in France.

While the French state made it possible for mothers to remain active in the labour market despite having a child, the male breadwinner model still prevailed in Germany. Many mothers had to interrupt their careers because there was no adequate care option for their child. Starting in the 1990s, childcare places for children aged three to six were gradually expanded. However, it was difficult to reconcile the opening hours of the daycare centres with everyday working life. In contrast to France, there were hardly any childcare options for under three-year-olds. Overall, France spent between 1.8 and 3.6 times as much money on childcare as Germany did in the period under review.

Women with university degrees often postponed family planning

In both countries, but particularly in Germany, mothers had part-time jobs in order to be able to continue working. Women who worked part-time were more likely to have children than women who worked full-time or not at all. The negative effect of full-time work in Germany is more than twice as strong as in France. The German childcare situation seems to have been more difficult to reconcile with a full-time job. In Germany, women with university degrees were more likely to avoid pregnancy during their first years on the job. Moreover, they postponed family planning more often than in France, indicating that, in Germany, it is more difficult to reconcile family and career.

Improved childcare options would therefore prevent women from having to choose between having children and continuing their careers. As the example of France shows, appropriate family policy measures can both raise birth rates and increase the proportion of women working full-time.

The study is available to download at: *www.zew.de/PU81716*

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Q&A: Are Digitalised Companies More Resilient to Crises?

“Using the Short-Term Push Towards Digitalisation for Long-Term Investments”

The coronavirus has hit the world economy hard, with the lockdown having paralysed public life for weeks in many countries. But even with the lockdown easing up, hygiene and distance regulations still make it difficult to work together, shop, and use business services. Professor Irene Bertschek, head of the ZEW Research Department “Digital Economy”, explains in an interview what role the digitalisation of companies plays in their resilience to the crisis, and how different industries can react to the markedly changed conditions.

Companies were not prepared for the COVID-19 pandemic and the resulting months of emergency measures. What role does digitalisation play in crises?

The coronavirus crisis has shown that digitalised companies can react more easily and much faster to rapidly changing conditions. For example, digital companies have been able to offer and sell products and services online more quickly, allowing their employees to continue working from home; also, video conferencing has effectively become the gold standard for business communication during the crisis, replacing face-to-face meetings as well as costly business trips.

This crisis resilience via digitalisation was, however, already observable in the financial crisis of 2008/09, as one of our ZEW studies has shown. Back then, highly digitalised companies had experienced significantly lower productivity losses than companies with a low level of digitalisation.

Highly digitalised companies are proving to be more resilient to crises. What does this mean for the ongoing coronavirus crisis?

This means that digitalised companies are more adaptable both at the beginning and during a crisis and when economic activity picks up again, as is now the case after the lockdown.

However, this does not apply equally to all sectors of the industry. The business-related services sector has an advantage here, for example. An engineering office or insurance company can stay in touch with their customers more easily by offering their services online; working from home also facilitates this model quite well. Consumer-related industries on the other hand, such as the restaurant trade or hairdressers, have a much harder time, as their services are created in-person with the customer.

Some sectors are obviously worse off than others. What opportunities do consumer-related service providers such as innkeepers and hairdressers have?

Innkeepers and hairdressers experienced a complete collapse in demand, as they had to wait until they could resume their business activities in compliance with protective measures. Digitalisation can help them remain visible to a certain extent via online advertising or, as has sometimes happened in the catering sector, by offering food and drinks for delivery, but digitalisation isn’t as big of a benefit here as it is for the business-related services sector.

And what does this mean for companies in the manufacturing sector?

In the manufacturing sector, companies that had already automated their processes (for instance, by using robots in production or in warehouse logistics) definitely had an advantage over non-digitalised competitors. Otherwise often spurned as job killers, robots help to maintain distance between colleagues and enable employees to work on site even during the coronavirus crisis.

However, many manufacturing companies are having to contend with a sharp drop in demand at home and abroad, or with supply difficulties; digitalisation can at best cushion the effects of the crisis here.

So, can the crisis be a catalyst for more digital work and technology improvements in other companies?

The coronavirus crisis has clearly given the German economy a general push towards digitalisation, and much of this, such as remote work arrangements, video conferencing and online sales, will probably continue – at least in part – even after the lockdown. This is, however, not enough.

Companies should be taking this opportunity now to make necessary long-term investments and restructure accordingly. Digitalisation alone cannot prevent the negative effects we are currently experiencing, but it can cushion the blow, contributing to overall crisis resilience.

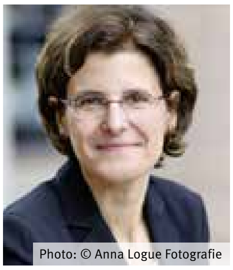

Photo: © Anna Logue Fotografie

Prof. Dr. Irene Bertschek is head of the ZEW Research Department “Digital Economy” and professor of economics of digitalisation at Justus Liebig University Giessen. In May 2019, she was appointed as a member of the Commission of Experts for Research and Innovation (EFI), advising the Federal German government. In her research, she investigates how digitalisation changes economic processes and how it affects firms’ labour productivity and innovation activity. Her methodological expertise lies in the field of microeconometrics and the analysis of firm-level data.

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According to a recent ZEW study, there is a risk that governments will unintentionally slow down the adoption of cloud computing.

Photo: ©istockphoto.com/Denis Isakov

Cloud Computing: Are Policymakers Setting the Right Incentives?

Cloud computing has great economic potential in terms of both new business and job creation. Governments are therefore setting up support programmes throughout Europe in order to advance the digital transformation. Existing funding programmes, however, often still support investment in physical capital, thereby discouraging the use of digital services, a recent ZEW study finds.

Over the past decade, companies' access to digital technologies has fundamentally changed. To benefit from digitalisation, companies initially had to invest primarily in their own software and hardware, but now they are increasingly using cloud computing services for storing and processing data. These providers can make the entire IT infrastructure accessible via the internet.

The share of companies using paid cloud computing services in Germany doubled from 11 to 22 per cent between 2014 and 2018, resulting in them no longer having to invest in their own digital technologies to the same extent as before. The most important prerequisite to get the most out of cloud computing services is the availability of fast broadband internet connections.

The proliferation of cloud computing coincides with another trend that sees companies becoming increasingly independent of tangible assets such as machines or factories, while intangible assets such as data, research and development, or brand values are becoming even more important. Cloud computing can help to promote this trend, as it is a cheap and flexible replacement for traditional software and hardware technologies.

Are existing political support programmes achieving their purpose?

Cloud computing has high hopes for the economy, with the EU Commission estimating that cloud computing has led to the creation of 1.6 million jobs between 2008 and 2020, and 303,000 new companies between 2015 and 2020. Political decision-makers thus want to promote the dissemination of this technology so that it contributes to economic growth, the creation of new jobs, and the competitiveness of the economy as a whole. Existing political support programmes, however, still back investment in physical capital rather than the adoption of digital services. It is thus not clear whether these instruments are promoting the digital transformation of companies through the use of cloud services, or rather counteracting the proliferation of cloud computing.

The question as to what extent government investment support influences the proliferation of cloud services is the subject of a current ZEW study in cooperation with the OECD. Two different funding programmes are examined in more detail, namely: the "Annual Investment Allowance" (AIA) from the UK, and the "Joint Task for the Improvement of Regional Economic Structures" (GRW) from Germany.

The UK's AIA scheme provides tax incentives to companies that invest in physical capital, including investments in ICT. As the study shows, AIA resulted in the subsidised companies investing a total of 64 per cent more. Investments for the acquisition of ICT increased by 34 per cent, while those for the acquisition of hardware increased by 31 per cent. In contrast, the propensity of companies to purchase cloud services fell by 12 per cent.

For Germany, the study examines the regional support programme GRW, which subsidises investments in capital and personnel. But the picture here is the same: it seems that government support can actually make companies less inclined to use cloud computing. Companies regard investments in ICT physical capital and investments in cloud computing as substitutes, which is why they invest more in physical capital rather than cloud computing, especially when the former is supported by the state. There is a risk that governments will unintentionally slow down the adoption of cloud computing, which would have further negative consequences for the adoption of other data-driven technologies (such as big-data applications which depend on cloud computing). The ZEW study therefore suggests that political decision-makers should have the programmes for the promotion of investments in future technologies include digital services in order to reach companies that are dealing more and more with intangible goods.

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Virtual ZEW Research Seminar on COVID-19 and Inequality

How are inequalities changing as a consequence of the coronavirus crisis? What are the big challenges that await us in the world of tomorrow? What can be done to tackle inequalities in the future? Five renowned scholars gave their perspectives on these crucial questions in a special policy session of the ZEW research seminar series, held online on 19 June 2020 with almost 300 participants from all parts of the world. The virtual event was organized by ZEW Mannheim in cooperation with Università Cattolica del Sacro Cuore di Milano and the Society for the Study of Economic Inequality (ECINEQ). It comprised five individual flash talks, followed by lively discussions with the participants.

The speakers – Daniele Checchi (Università degli Studi di Milano), Mariano Tommasi (Universidad de San Andrés, Argentina), Michèle Tertilt (University of Mannheim), Miles Corak (CUNY), and Stephen Jenkins (LSE) – described how the coronavirus crisis exacerbates pre-existing inequalities in health, labour market outcomes, and living conditions across socio-economic and demographic groups. They all raised concerns about the long-term effects of COVID-19, for instance on social mobility and equal opportunities, as many dimensions of inequality are likely to increase further in the next months. However, even though the crisis certainly reveals long-lasting problems, it could also be a chance to redesign social policies to tackle poverty and inequality.

Source: ZEW

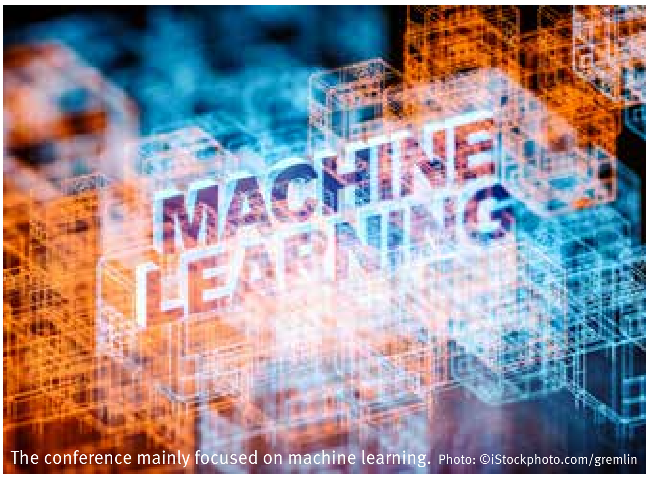
The speakers with the three organisers, ZEW Research Associate Professor Lorenzo Cappellari and ZEW researchers Dr. Sarra Ben Yahmed and Dr. Guido Neidhöfer.

ZEW Environmental Researchers at EAERE Conference

Eleven researchers of the ZEW Research Department “Environmental and Resource Economics, Environmental Management” presented their latest work at this year’s digital conference of the European Association of Environmental and Resource Economists (EAERE) from 23 June to 3 July 2020. The contributions of the ZEW researchers addressed issues such as technological progress, international environmental policy, the successful design of incentive systems to meet the Paris climate targets and the importance of e-mobility. The annual conference aims to give its members the opportunity to network, exchange ideas and discuss a wide range of current topics in environmental and resource economics. Due to the coronavirus pandemic, this year’s conference with several hundred participants, including many well-known economists, was held digitally.

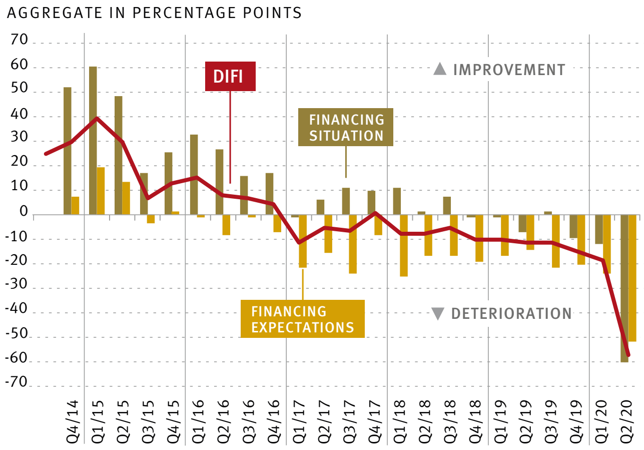
18th ZEW ICT Conference on Artificial Intelligence and Digital Platforms

The 18th Conference on the Economics of Information and Communication Technologies was organised by the ZEW Research Department “Digital Economy” on 2 July 2020 – with one major innovation: Due to the ongoing coronavirus pandemic, the event was held virtually for the first time ever and had a reduced programme. With almost 300 international researchers it was extremely successful. The conference kicked off with a keynote speech by Professor Avi Goldfarb from the University of Toronto, who discussed the question of whether machine learning as a method of artificial intelligence is a basic technology. The conference featured a total of six parallel sessions that explored various aspects of the digital economy, with topics ranging from consumer behaviour, competition on digital platforms and the economic impact of artificial intelligence to the sharing economy, as well as questions of privacy and data protection.



The conference mainly focused on machine learning. Photo: ©iStockphoto.com/gremlin

Real Estate Financing Market – Sentiment Down to Historic Lows



Average assessment of the current situation in and expectations for the five real estate market segments (office, retail, Logistics, residential, hotel). Source: JLL and ZEW

The ongoing coronavirus crisis is now also reflected in the German Real Estate Finance Index (DIFI) of ZEW and JLL. In the second quarter of 2020, the sentiment indicator fell by 37.8 points to a current level of minus 56.7 points, with both the assessment of the current financing situation and the financing expectations for the coming six months having declined significantly. The variety of economic consequences and the uncertain impact of national and European economic stimulus packages have pushed the index to its lowest level since the survey began in 2011. The financing situation has deteriorated significantly for all segments, and particularly for the retail sector. In contrast, the situation for logistics properties is assessed less negatively thanks to the increase in e-commerce in recent months. The DIFI reflects survey participants' assessment of the current situation of and expectations for the commercial real estate financing market, and is conducted on a quarterly basis.

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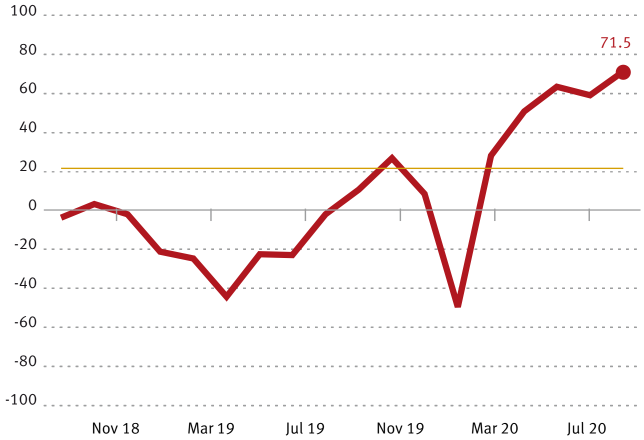
ZEW Indicator of Economic Sentiment: Renewed Rise in Expectations



The ZEW Indicator of Economic Sentiment climbed 12.2 points to a new reading of 71.5 points in August 2020. Source: ZEW

In August 2020, the ZEW Indicator of Economic Sentiment for Germany increased again significantly compared to the previous month. Expectations are now at 71.5 points, 12.2 points higher than in the previous month. The assessment of the economic situation in Germany has slightly worsened, with the corresponding indicator decreasing 0.4 points to minus 81.3 points in the August survey. According to the assessments of the individual sectors, experts expect to see a general recovery, especially in the domestic sectors. However, the still very poor earnings expectations for the banking sector and insurers regarding the coming six months give cause for concern. Financial market experts' sentiment concerning the economic development of the eurozone has improved, with the corresponding indicator climbing 4.4 points to a current level of 64.0 points compared to the previous month. The indicator for the current economic situation in the eurozone fell 1.1 points to a level of minus 89.8 points.

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12th ReCapNet Conference

We are pleased to announce that ZEW Mannheim will host the twelfth conference of the ZEW Network on Real Estate Markets and Capital Markets (ReCapNet). The event will take place online in mid-November 2020 and is open to all researchers interested in the interactions between real estate markets and capital markets. The main theme of the conference will be "Global Trends and Real Estate: Risks and Challenges". Professor Edward Glaeser from Harvard University will give the keynote speaker. Everyone is welcome to register and attend the conference. The registration form will be available on the conference website in October. More information: *www.zew.de/VA3175-1*

IMES Workshop

The Integration of Immigrants and Attitudes towards the Welfare State (IMES) group, a joint research group of ZEW Mannheim and the University of Mannheim, is pleased to announce its 2020 international workshop to be held at ZEW on 22–23 September 2020. The event aims to bring together international scholars from different social sciences (political science, sociology, economics) to present and discuss recent empirical and policy-oriented research on the integration of immigrants and its effect on the welfare state and attitudes formation. If your are interested in attending the workshop, please register by 23 August 2020. More information: *www.zew.de/VA3040-1*

European Companies in Competition with China

The European Commission's ban of the planned merger of the Siemens and Alstom train divisions in 2019 put the issue on the front page: Is the EU Single Market well equipped to adequately deal with the challenges posed by China's economy and Chinese companies, such as the railway giant China Railway?

China's economy plays by its own rules. The Chinese economic model of the "socialist market economy with Chinese characteristics" is characterised by the state intervening in economic activity in a plethora of ways to achieve and maintain its industrial policy goals. In order to avoid competitive disadvantages for European companies as a result of such policies, there has been discussion for some time about possible reforms. In cross-border trade, European companies are protected by anti-dumping and anti-subsidy instruments, but the European market economy is nonetheless far from being perfectly protected in certain situations. An example of this is when third countries subsidise other companies which then, in order to avoid anti-dumping or countervailing duties, relocate their production to the EU and sell their products here. Competitive disadvantages also exist when subsidised companies are in a position to submit better bids in company acquisitions or public procurement procedures.

In the EU Single Market, State aid control exists in order to avoid distortions caused by state subsidies. However, subsidies granted by non-EU governments that have an impact on the Single Market fall outside EU State aid control. To fill this regulatory gap, the European Commission presented a White Paper, featuring three instruments. One of these instruments is designed to generally capture the distortive effects of these subsidies, while the other two specifically address distortions in company acquisitions and public procurement procedures.

The German Monopolies Commission has dealt extensively with the challenges posed by China's state capitalism in its latest biennial report published at the end of July. In the report, the Commission advocates the introduction of an instrument that largely ensures equal treatment of third country subsidies and State aid granted by Member States. While the instruments proposed in the White Paper refer to subsidies as defined in the anti-subsidy rules, the third country aid instrument would be aligned with the State aid rules.

A viable alternative to protecting the European Single Market would be to defend companies directly; other instruments under discussion therefore try to strengthen European companies. However, these instruments would also exacerbate competition problems. In this way, "defensive mergers" would pose similar problems as defensive (export) cartels or defensive aid. The restriction of competition resulting from such measures would be primarily at the expense of consumers, not to mention the risk of getting into a subsidy race.

These rules apply to the EU Single Market. As for the Chinese market, fair conditions should be sought through international agreements. In this respect, the planned EU–China investment agreement is paramount, although it should also be extended to include agreements on granting subsidies. The conclusion of the negotiations on this agreement, which has lasted more than six years now, was actually expected for this year.

President of ZEW, Prof. Achim Wambach, PhD

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