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KERSTIN JÜRGENS, REINER HOFFMANN,
CHRISTINA SCHILDMANN

LET'S TRANSFORM WORK!

RECOMMENDATIONS
AND PROPOSALS
FROM THE COMMISSION
ON THE WORK
OF THE FUTURE



Hans **Böckler**
Stiftung 

Mitbestimmung · Forschung · Stipendien

KERSTIN JÜRGENS, REINER HOFFMANN,
CHRISTINA SCHILDMANN

LET'S TRANSFORM WORK!

This title is No. 376 in the Hans Böckler Foundation's *Study* series that continues, with sequential numbering, the *edition Hans-Böckler-Stiftung* series in electronic form.

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KERSTIN JÜRGENS, REINER HOFFMANN,
CHRISTINA SCHILDMANN

LET'S TRANSFORM WORK!

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AND PROPOSALS FROM
THE COMMISSION ON
THE WORK OF THE FUTURE

Translated from the German
by Andrew Wilson

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Mitbestimmung · Forschung · Stipendien

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INTRODUCTION

JOINING FORCES TO SHAPE THE WORK OF THE FUTURE

Just a few years ago it would have been impossible to put together a text in the same way as the present publication was compiled. Countless meetings and telephone conversations would have been necessary in order for all the authors to discuss and agree on the various drafts. Today, thanks to modern information and communications technologies, we can work together on texts regardless of geographical distance, access all the necessary data, compare the various versions of documents and make all the stages in the writing and editing process visible. However, it is not only the drafting and editing of books or other texts that today rely as a matter of course on the use of digital technologies and collaboration in virtual networks. These forms of digital working have long since gained entry into the whole of economic life and affect the daily lives of us all. This has not only radically changed work routines and ways of working together but has also given rise to new work tasks and completely new business models.

When the Hans Böckler Foundation set up the ‘Commission on the Work of the Future’ in 2015, it was clear that the task facing the new body would not be an easy one. Its 32 members, drawn from the supervisory boards and works councils of large companies, the creative economy, trade unions, government ministries and various areas of academic research, were asked to reach agreement on the change in the world of work and, in doing so, to focus in particular on two questions. Firstly, what will the work of the future look like? And secondly, what are the new challenges facing employment policy makers?

In order to find answers to these questions, the Hans Böckler Foundation took the conscious decision to ensure that the Commission would be composed of equal shares of academics and practitioners and that the chair’s duties would be divided up in the same way. At the same time, the Foundation refrained from setting the Commission closely defined objectives or obliging it to produce a final

programme. Rather, an open discussion space was to be created within which as much light as possible could be shed on what was still largely uncharted territory for researchers and employment policy makers. The members of the Commission were requested to enter into genuine dialogue about their views and ideas for shaping the work of the future. In other words, they had been invited to join the Commission not so much as representatives of their organisations but rather as experts on work and employment, in both the present and the future.

The composition of the Commission and the involvement of outside experts meant that a wide range of different perspectives and experiences, priorities and positions, questions and expectations could be utilised for its joint deliberations. For all this *diversity*, however, Commission members shared a curiosity about the radical changes that technological progress will entail and which are only beginning to become apparent. And they were equally united in their desire that their thoughts and ideas should help to ensure that the world of work offers as many people as possible a good quality of life and a secure future.

The Commission's work was shaped by a shared conviction that organising work in a way that puts human beings centre stage would make a significant contribution to social cohesion and the strengthening of democracy. The importance of this aspect became crystal clear over the two years of the Commission's deliberations. Over this period, we saw how right-wing populist movements were gaining support in Germany and across Europe. And beyond the borders of the EU, on the other side of the Atlantic, we had to watch as the fundamental democratic principles of peaceful coexistence have been increasingly called into question.

This report presents the key findings of our Commission's deliberations. Since the aim was to sketch as sweeping a panorama as possible of the conceivable paths along which the work of the future might develop and the requirements that might have to be met, it was not our aim to submit a final report presenting the 'agreed policy position' of all the Commission's members. Given the body's heterogeneous composition, it was evident from the outset that this would not be possible.

We opted instead for a different way of presenting the results. The present publication begins with an analysis of the changes taking

place in the world of work. We describe the principal driving forces of these changes as identified by the Commission, outline some possible development paths and enumerate the resultant challenges for business, society and policy makers. As a team of authors, we filtered out those key ideas and proposals from our debates on which there was a broad consensus among Commission members and on this basis formulated a whole series of concrete proposals or recommendations, presented in the text under the heading **→ FOOD FOR THOUGHT**. The ideas outlined in the sections thus marked were decided and voted on by the Commission as a whole.

It was also our intention that this final report should provide an insight into the issues that gave rise to considerable controversy on many points but also, in many cases, to enthusiastic debate. There were many aspects on which we were unable to achieve any consensus, whether because they remained controversial even after intensive debate or because there was simply not enough time to conclude the discussions. Wherever we think that these unresolved topics might be of particular public interest, we have included them in this final report under the heading **⇐ POINT OF CONTROVERSY**.

The report was compiled by us as a team but is based on the results of our joint discussion process. Commission members also contributed to the formulation of the sections entitled Food for Thought.

WHAT IS AT STAKE?

Digital change is being discussed in Germany in a large number of action groups, working groups, platforms and think tanks. This abundance of activity reflects both the great enthusiasm about the new possibilities that technological progress brings and a profound uncertainty about where the change will take us.

Great *hopes* are being pinned on digital technologies in the expectation that they will make our daily lives and work considerably easier or even help us, in a hitherto unknown way, to overcome health constraints and physical handicaps. Digital networking and 'big data' are giving rise to new forms of business and exchange relationships. Considerable potential is also opening up for a redesign of work or-

ganisation that would make it more mobile, flexible and cooperative and hence bring with it opportunities for individual development and participation.

On the other hand, there are those for whom technological change is predominantly a cause for concern. The media is awash with stories about the threat of mass unemployment caused by digitalisation. Other, more probable scenarios describe at least moderate to severe dislocations in the labour market, together with increasing polarisation. The fearful question is what will remain of the German social market economy if the disruptions brought about by digitalisation cause stable structures and institutions to totter.

Whether the pendulum will swing further in the direction of opportunity or risk is by no means a foregone conclusion but will depend on the willingness and ability of all the relevant actors, particularly the social partners and the state, to be proactive in shaping the change. The question of when, for what purpose and to whose advantage new technologies will be brought into use is in need of clarification. The process of digitalisation is supposed to make people's life (and work) easier, to help them achieve greater self-determination and to offer them greater opportunities to develop their creativity. Whether this will actually be the case will depend on the outcome of the wide-ranging societal negotiations that are already in full swing.

The use of digital technologies is about to fundamentally *alter existing relations of economic power*. Conventional industries are under pressure to change if they wish to remain successful because they are, for example, increasingly having to go head to head with large Internet companies. These organisations have already invested vast sums in research into artificial intelligence and thereby given themselves a considerable head start with regard to the next phase of progress. Thus technological progress extends far beyond the actual areas of application. It creates new markets, reconfigures value chains and fundamentally changes the competitive conditions. In brief, it also changes the foundations on which industrial relations rest. Digital capitalism brings new actors on to the scene (e.g. Internet platforms) who blur the boundaries between employers and employees. In complex value chains, it is no longer clear where a company's boundaries actually lie (or even what they consist of). Increasing interconnectedness challenges established labour protection mechanisms. New tech-

niques for monitoring workers and a lack of effective data protection are propelling us towards the 'see-through employee', a prospect that raises the question of human dignity. As a result, the established categories of our economic order, as well as the *basic principles of our work culture, are faltering* and must, against a background of familiar clashes of interest, be readjusted and thereby made sustainable.

DIGITALISATION IS NOT THE WHOLE STORY

Digitalisation played a prominent role in the Commission's work as the principal driving force of societal change. It ran like a thread through all our meetings because, as the driver of change, it harbours the greatest potential for upheaval and disruption. Nevertheless, from the very outset, it was the Commission's declared intention to look at the overall picture. The possible consequences of the use of new technologies and the resultant opportunities and risks are located within a broader context and interact closely with other important forces for change.

Consequently, the present report seeks to take into account all the forces shaping working life that are particularly relevant to people in the labour process today and particularly characterise our society as a whole. Besides digitalisation, these forces include *demographic change, the changes in men's and women's life plans, the question of the reconcilability of paid work and care responsibilities* and, not least, *immigration*.

This broaches issues that remain unresolved in Germany. Changing demographics are creating not only considerable labour shortages but also additional demand for people to look after those requiring care, to whose needs the infrastructure is not yet geared. This only makes the hardships caused by inadequate reconcilability all the greater. Not infrequently, they give rise to disputes and exhaustion when carers have to work themselves into the ground dealing with the conflicting demands of paid work and family responsibilities. The pressures on workers have in any case clearly reached such a high level that business leaders and policy makers alike are alarmed by the costs incurred by absenteeism and rehabilitation.

Finally, society is also struggling with its attitude to immigration. German society is ageing and can certainly make good use of foreign labour. Business has long been saying that it cannot manage without immigrant labour and is warning that by 2030 there will be a shortage of around six million workers. At the same time, the influx of migrants is sparking fear or even outright hostility, which has recently been directed in particular at refugees fleeing war zones.

Thus at the very start of their deliberations it was clear to the Commission it was going to focus not solely on digitalisation but also on the problems that remain unresolved, since digitalisation is giving them renewed urgency. On the other hand, digitalisation also holds out the possibility that they might be resolved, thereby improving the *quality of life*.

Digitalisation has the potential to polarise incomes and life chances. A growing number of people already have the feeling that they are not partaking of this success and are leading lives characterised by growing economic and social uncertainty. The current German government Report on Poverty and Wealth attests to the country's 'entrenched inequality'. The consequences of digitalisation could be explosive if the '*dividends of digitalisation*', if they are to be reaped (expert opinion is divided on this), are not evenly distributed.

HOW DO WE PROCEED FROM HERE?

It is time to reinforce the foundations for the work of the future. To that end, we must redesign many aspects of the regulatory environment and of work itself. 'Let's Transform Work!' – that's the title we have given our report. This ties in with the notion of transformation that has been in fashion for some years. However, we are not aligning ourselves with the purely technological meaning of this notion that has shaped the digitalisation discourse in recent years and often has deterministic traits. Rather we understand transformation as something that is as necessary as it is active, as a process of change that is not at all predetermined but should nevertheless pursue a clear objective, namely to make work better for as many people as possible. To that end, we must embark on a new phase in which we join forces in

order to seize the opportunities offered by digitalisation and translate them into innovations, a better quality of life and security. Our report is intended to provide the kick-start required to launch this new phase.

We would like to thank all the members of the Commission for their sustained commitment over two years, for their willingness to share their knowledge and discuss subjects of great controversy and for their contributions in drafting the Commission's proposals and recommendations.

Berlin and Kassel, May 2017

Kerstin Jürgens, Reiner Hoffmann and Christina Schildmann

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PARTICIPATING IN THE WORLD OF WORK

STANDARDS FOR DIVERSITY



**DEFEND
STANDARDS,
EXTEND
PROTECTION**



WHERE DO WE STAND?

Workers' position in the world of work and hence in the wider society is determined by the employment form. Are they employees? On what terms are they employed? Do they have an employment contract or are they just given a work order? It is not only the volume of work and remuneration that are linked to these questions, but also employment rights and social security.

THE STANDARD EMPLOYMENT RELATIONSHIP AS A GUARANTEE OF PROTECTION. From the late 1950s onwards, manufacturing industry in the then recently established Federal Republic of Germany grew at a very rapid pace. This expansion went hand in hand with a considerable increase in employment and the development of codetermination in industry-level collective bargaining and workplace representative bodies. This period, now known as the 'economic miracle', was characterised by full employment, continual wage increases and the expansion of the welfare state. The high demand for labour, which also led businesses to recruit workers from other European countries (→ **MIGRATION**), meant that the trade unions were able to push through many improvements for their members.

Closely intertwined with this economic dynamic was the institutionalisation of the *standard employment relationship*. This term denotes an employment relationship that is open-ended, subject to social insurance contributions and generally held on a full-time basis.¹ The standard employment relationship fulfils functions that offer *reliability* to employers and employees alike. The 'protection function' relates primarily to employment security, while employers benefit from the 'orientation and regulatory function' of labour and social security law and the 'incentivising and selection function', which provides an incentive for continuous employment.² In the competition for labour, these

¹ A broader definition also includes part-time jobs, but only those involving 20 or more hours' work per week.

functions produced rules that created a level playing field for all businesses and prevented them from overbidding in their efforts to recruit workers. From 1950 to 1980, the standard employment relationship was the dominant employment form in West Germany. In East Germany, full employment and full-time work were the norm, but the low unemployment rate concealed a reality of underemployment and hidden unemployment.

THERE HAS ALWAYS BEEN PLURALITY IN EMPLOYMENT RELATIONSHIPS. Despite the dominance of the standard employment relationship, there have always been groups who work in *divergent* employment forms and earn their livelihood through, for example, seasonal work, home working or part-time work. The standard employment relationship was tailored to the traditional *single breadwinner* model of the family, in which the man of the house earned enough to support the entire family. The wife was to be largely exempt from paid work in order to devote herself to domestic work and childcare, which if she were to enter the labour market justified the lower pay and small number of hours' work on offer to female employees.³ In this West German model, the vast majority of female workers were employed in short-hour jobs; in the former German Democratic Republic, on the other hand, women were employed full-time. It is true that housework was still largely left to women there as well, but the provision of whole-day childcare did provide them with some relief from the burden of work, both paid and unpaid.

With the *shift in values*, the *women's movement* and the *expansion of educational participation*, the traditional West German model gradually broke up. The breadwinner-secondary earner model became increasingly popular and the number of couples who wished to divide the volume of work evenly between themselves also increased. The expansion of the service sector from the 1980s onwards was driven not least by these modernised life choices.

WORK IS UNDER PRESSURE. When growth began to slow down from the 1970s onwards and unemployment began to rise, employment

2 On the functions of the standard employment relationship, see MÜCKENBERGER 1989.

3 The 'splitting' system of calculating the tax liability of married couples, which allows both spouses to pay taxes on half their combined income, effectively lowering the tax liability for the main breadwinner when the incomes differ significantly, rewards the traditional role allocation and encourages an unequal division of paid work between husband and wife.

relationships and the welfare state came under pressure. Pointing to the international competition, companies complained about excessively high wage costs. Employers demanded greater flexibility in employment: binding wage structures, collectively regulated working times and protection standards were regarded by many of them as obstacles to growth and barriers to recruitment. The remedy, it was argued, lay in the deregulation of employment and the dismantling of statutory protective provisions, such as a loosening of dismissal protection and relaxation of the regulations governing fixed-term employment contracts and marginal part-time employment (so-called 'mini-jobs'⁴). The consequence was a *differentiation of employment forms*, a process given further momentum by the privatisation of public services and the growing number of companies not bound by collective bargaining agreements.

4 Mini-jobs are not subject to income taxes if the total monthly earnings from them stay below a threshold of 450 euros. Mini-jobs require no social insurance contributions from the employees. Most opt out of paying the standard payroll deduction for their pensions, increasing the risk of poverty in retirement.

employment (so-called 'mini-jobs'⁴). The consequence was a *differentiation of employment forms*, a process given further momentum by the privatisation of public services and the growing number of companies not bound by collective bargaining agreements.

THE EXPANSION OF 'NEW' EMPLOYMENT FORMS.

The share of employment outside the standard employment relationship virtually doubled between 1991 and 2015. According to the Federal Statistical Office, around a quarter of all employees and virtually half of all economically active women are now working *part-time*. In 2015, 16 per cent of the employed population held *mini-jobs*. *Fixed-term employment* rose by two percentage points between 1995 and 2014; its share of total employment is now 13 per cent. Fixed-term employment is not a mass phenomenon but is standard for entry-level jobs:

5 According to the IAB Establishment Panel 2014, 60 per cent of appointments in the public services were fixed-term. The figure was 40 per cent in the private sector and 87 per cent in academia (HOHENDANNER et al. 2016).

45 per cent of new hires are fixed-term.⁵

In addition, *temporary agency work* and *self-employment*⁶ have both increased massively. Since the mid-1990s, temporary agency work has increased more than fivefold. In 2016, it accounted for three per cent of all employees. The number of the self-employed rose significantly up until 2012 but has since fallen back slightly; self-employment now accounts for about six per cent of total employment (BRENKE/BEZDOSKA 2016). The self-employed are an extremely heterogeneous group whose income ranges from very low to very high. *Contracts*

6 In this publication, the term 'self-employment' is understood to refer to self-employment without employees only.

for work and services overlap considerably with freelancing. Since such contracts need not be reported, there are no reliable data, in contrast to the situation with temporary agency work. Nevertheless, there are signs of an upward trend and cases of abuse (IG METALL 2015; BÄCKER/SCHMITZ 2016) (→ **MIGRATION**).

It is repeatedly emphasised in employment policy debates that this plurality of employment relations is also a product of *employees' preferences*. This is indeed the case for a certain proportion of employees. However, the emphasis on preferences conceals the fact that a significant share are working outside the standard employment relationship for lack of alternatives. Part-time work and self-employment are often responses to the inadequate flexibility of standard employment. The unequal distribution of care work and an inadequate child and social care infrastructure constitute major obstacles to full-time employment.

POLARISATION OF THE WORKING POPULATION BY EMPLOYMENT FORM.

The dominant employment form differs from sector to sector. Mini-jobs and other part-time arrangements are found above all in the hospitality and retail sectors, temporary agency work is a popular instrument in large manufacturing companies and fixed-term employment is the instrument of choice for flexibilisation in the public services. Inequalities in employment status are certainly not confined to slow-growing sectors but can also be observed in booming areas of the economy, as is evident from the expansion of temporary agency work in the manufacturing sector.

However, one characteristic appears to be common to all sectors of the economy: it is mainly women, younger workers and the poorly qualified who are employed in part-time jobs, mini-jobs, temporary agency work and fixed-term jobs.⁷ A precarious employment status and low pay combine to produce an employment situation that does give individuals a foothold in the labour market but hardly enables them to earn their livelihood independently or to plan for the future (→ **INCOME**).

7 The share of women in standard employment relationships remains largely unchanged at a scant 30 per cent (EICHHORST et al. 2017).

INCREASING PRECARIETY EVEN IN STANDARD EMPLOYMENT. On the one hand, there is still a large group of employees who continue to be employed or are newly recruited on standard employment contracts. Standard employment has increased again, and the length of

8 According to IW KÖLN (2016), the length of job tenure has not changed significantly over the last ten years. In 2015, 46 per cent of respondents in the labour force survey had been with their current employer for at least ten years (STATISTISCHES BUNDESAMT 2017b).

job tenure among core employees is still high.⁸ Nevertheless, a *rift among employees* is emerging. While some still work within a space characterised by high protective standards, a high level of coverage by collective bargaining agreements and steady improvements in pay, there are others to whom this has long ceased to apply. Even within standard employment, some employees are experiencing their working lives as precarious because they are

faced with intense competitive pressures and the guarantees of advancement that have existed hitherto are no longer effective. The consequence is that *employment relationships offering varying degrees of protection now co-exist*.

WHO STILL TALKS ABOUT THE UNEMPLOYED? Despite the favourable developments in the labour market, a considerable potential supply of labour remains untapped. Over the course of 2016, an average of 2.7 million people were unemployed; if participants in the Federal Labour Agency's training and back-to-work programmes are included, the figure is 3.5 million (BA 2017a). A further segment of the working population is underemployed. According to the Federal Statistical Office, 14 per cent of part-timers and four per cent of full-timers would like to increase their working times. Thus despite a generally positive labour market situation, there is a considerable number of people in employment who could be described as *gainfully employed but work-deficient* (→ **INCOME**).

WHAT SHOULD WE BE PREPARING FOR?

It has been apparent for many years that a structural shift in the economy has been taking place: *an expansion of service work*. Seven out of every ten employees now work in the service sector. The rapid growth of the retail and health and social services is particularly noticeable. While generally it is mainly low and intermediate-skill jobs that have been affected by rationalisation, there is an increasing demand in the service sector for just such jobs. However, the main consequence of the structural change is that the demand for high-skill (graduate) jobs has increased. The next structural shift, driven by digitalisation, is now fast approaching.

EVOLUTION OF THE LABOUR MARKET UNCERTAIN. The German debate on the rationalisation effects of digitalisation was kindled by Frey and Osborne's study. They predicted, in the case of the USA, a reduction of 47 per cent in all employment over the next 20 years (FREY/OSBORNE 2013). This scenario cannot be applied to Germany because the occupational system is very different from that in the USA. Furthermore, due to the dual vocational training system, which combines an apprenticeship in a company and class-room education in a vocational school, occupational profiles in Germany are considerably more complex. Interaction, situational uncertainty and creativity are important elements that cannot simply be replaced by technology (PFEIFFER/SUPHAN 2015). Taking into account the specifics of the German employment system, the Institute for Employment Research (IAB) estimates that only 12 per cent of all jobs will be at risk of disappearing because of automation.⁹

The jobs that may potentially be replaced by technology are not evenly distributed across the skill categories. Low-skill workers will be more severely affected than the more highly qualified: jobs in offices, in clerical processing and sales and

⁹ An IAB calculation assumes that in 2025 1.5 million jobs will no longer exist but that, conversely, virtually 1.5 million new jobs will be created. Digitalisation will accelerate the pace of structural change towards more services (WOLTER et al. 2016).

in machine maintenance and operation are more easily automated than jobs in teaching, development, social care, planning etc. The number of jobs in other areas, such as IT and health care, will increase (WIFOR 2016). It is uncertain what the *net balance* will be, even if much of the technically possible potential for change is deployed in certain sectors and if consumption patterns and changed import and export structures are taken into account. It is also uncertain whether businesses will actually make use of the technology available to them. For that to happen, technological innovations will have to be deemed economically profitable; there are also legal and ethical issues that will have to be addressed (DENGLER/MATTHES 2015).

All in all, digitalisation's potential for rationalisation and automation is counterbalanced by its considerable positive potential for enhancing employment and creativity through *job enrichment*. If certain activities become more heavily automated, the proportion of human-machine cooperation in a job will rise. The remaining or new job designs will tend to be more demanding than those lost to automation; consequently, reskilling will be a precondition for continuous employment. Moreover, there is nothing inevitable about any of the various automation scenarios; they are not predetermined as by a law of nature but can be shaped and adapted by human intervention. The social partners have a key role in any such interventions.

DOES THE CONCEPT OF 'EMPLOYEE' STILL APPLY IN THE DIGITAL ECONOMY? Technological progress not only changes work processes but also produces new business models and networks that change the structures of the economy and the world of work. However, employment and businesses are subject to legal and social standards.

An 'employment relationship' takes as its basis a clearly identifiable employer and employee. There are already areas of the labour market in which these roles are disappearing, for example in the platform economy or in parts of the education system. This trend will probably gain strength as digitalisation and the associated realignment of organisational structures proceed.

Many people no longer earn their living solely as 'employees' in jobs governed by an employment contract but work on the basis of individual assignments or commissions. Various groups of so-called *external employees* (or *subcontractors*) that have emerged out of complex supply and distribution chains are to be found not only in crowd

work¹⁰, network organisations and digital platforms but also in the core areas of the world of work.

Legal criteria, such as ‘personal dependency’ as a definition of an employment relationship, are becoming increasingly difficult to apply in these areas. German labour and social security legislation still endows the status of ‘employee’ with certain legal entitlements. Dismissal protection, regulated working time, collective representation under the terms of the Works Constitution Act, the Collective Bargaining Act and the minimum wage all do not apply to external employees. Consequently, the categorisation of workers and the ensuing form of social protection are topics of legal debate (e.g. DÄUBLER/KLEBE 2015; KLEBE 2016; PRASSL/RISAK 2016).

IS THE COMPANY BEING ERODED AS A REFERENCE FRAMEWORK? Digitalisation encourages the development of corporate structures that constitute networks rather than spatial or organisational units (SYDOW/HELFEN 2016). In such network companies, there are still employees at the centre but there are also freelancers for whom job tenure and the employment relationship are no longer pivotal, just their individual assignments. It is true that, in Germany, crowd work as an empirical reality is still on a scale that can be more or less disregarded; however, it could become increasingly important as an employment principle and thus impact on the regulation of other employment forms. In such a scenario, work would be organised via platforms to a much greater extent (irrespective of whether internal or external assignments were the object) (BOES et al. 2014, 2015). This would make it necessary to revise the established concept of the company.¹¹

10 In crowd work, tasks are outsourced digitally to an anonymous pool of workers, the so-called crowd. The tasks are allocated via digital platforms (‘intermediaries’).

11 References to the glossary (p. 226) are marked this way.

WHERE CAN WE BEGIN?

RECOGNISING PLURALITY IN EMPLOYMENT

The diversity of employment forms would not be a matter of concern for employment policy makers if the only issue at stake were different working times. However, if different employment forms give rise to extremely *divergent forms of social protection and treatment in labour law*, then that diversity becomes a major social policy issue.

→ FOOD FOR THOUGHT IN FAVOUR OF A PLURALISTIC CONCEPT OF WORK AND EMPLOYMENT

Divergences from full-time employment are currently often defined as 'atypical' and hence as 'non-standard'. Even jobs just below the full-time norm are still regarded by many as atypical, the implication being that they are somehow sub-standard, even though they are counted as 'standard employment relationships' in the official labour market statistics. As gender roles and the division of labour within the family change, the world of work must say farewell to the ideal of the single male breadwinner and its use as a reference framework. Part-time working must become something normal over the course of both men's *and* women's lifetimes, and not regarded disapprovingly as 'atypical'.

Social protection, occupational health and safety and the right to collective representation should be part of all employment forms. This is not only crucial for social cohesion and the stabilisation of social protection systems but also overdue from the perspective of

gender equality policy. Time off and working time reductions are becoming more normal in a society in which care work and retraining/upskilling are recognised as a normal part of one's career.

The legal concept of 'employee' and the associated protective standards enshrined in labour and social security legislation were a reaction to the desire to offer workers protection and security. Since the beginnings of industrialisation, when broad swaths of the working population were immiserated, it has gradually been recognised that government social policy and protective regulations on employment and the use of labour not only help individuals to enjoy a decent existence but also guarantee employers *a reliable supply of labour* and the maintenance of social stability.

Academics have long discussed changes in the use of labour, using the concept of '*decommodification*'. According to this historical insight, workers should not be directly exposed to market forces but, since they are generally in the weaker position in the market, enjoy protection in the form of legal safeguards. The current erosion of the status of 'employee' and the increase in employment not covered by such regulations carry with them the risk of 'commodification', in which more and more workers are having to fend for themselves unaided in the labour market. This is not a problem for everyone, since individuals with sought-after skills are well able to thrive in such labour markets. For many others, however, the bargaining position is much more difficult.

In a dynamically changing world of work, and in view of the plurality of employment forms, the question arises of whether a common standard actually still exists and, if it does, what it might consist of. Once more and more businesses are rejecting their role as 'employer' and withdrawing from the rules and obligations associated with it, gaps in protection begin to appear. Proposals for plugging these gaps for certain groups by means of commercial or civil law will not have the desired effect. For example, drivers offering rides through Uber, the online passenger transportation service, are regarded as self-employed; the actual platform sees itself as merely an intermedi-

ary, not as an employer. This model is as successful as it is controversial. In many of the countries in which Uber is active, legal disputes concerning the drivers' employment status are currently going through the courts.

The following remarks and the fundamental ideas outlined in the Food for Thought section below are based on the expert report prepared by ULRICH MÜCKENBERGER for the Commission.

The current debate is dominated by two positions. The first is critical of the *legal ambiguity* surrounding the concept of 'employee' and calls for further clarification and a more detailed legal definition. The second position goes further by *fundamentally challenging the appropriateness of the 'employee' concept*. From this point of view, the concept is incapable of addressing the current problems of structuring of work, which is why a conceptual and ultimately legal overhaul is required.

Empirical underpinning for this second position is provided by the explosive growth of platforms that either serve as intermediaries for service providers (Uber, AirBnB, Helpling) or themselves become the workplace, as in the case of crowd work platforms. It is estimated that in Germany there are between one and two million crowd workers. The customers of the crowd work platforms encompass the entire spectrum of the business world, from Google, Intel and AOL to Deutsche Telekom and Deutsche Bahn.

So what might a *plan for the redesign of employment relationships* actually look like, a plan that both takes account of change and maintains the protective functions by extending the standards derived from labour law, the social insurance system and codetermination into the future? Instead of dividing workers into those who belong and those who do not belong, it is essential to develop a *new system of graduated rights* and a concept of the employee apposite to the digital transformation.

→ FOOD FOR THOUGHT

A NEW CONCEPT OF THE EMPLOYEE

The Commission advocates a four-stage model of employment protection:

1.

New groups are brought into the *protective framework*, which has hitherto been tied to the concept of the employee. This applies in particular to the self-employed who are formally self-employed but are in fact brought under an employer's control by prescribed work processes or are *economically dependent* on him, i.e. when a dependent employment relationship exists in all but name.

To this end, an extended and more readily *enforceable definition of bogus self-employment* (misclassification of employees as independent contractors) is required, i.e. one in which in all probability a claim for employee status can be legally enforced. One starting point might be the regulation that was in force until 2002, which laid down five clear criteria to mark the bounds between employment and self-employment and placed the burden of proof on the employer.

It will further be necessary to define the concept of employee more broadly, i.e. extend it to those who are not personally subordinate but are *substantively or economically dependent*, particularly those engaged in *work obtained via digital platforms*.

The question of defining self-employment could also be approached from the opposite direction. A self-employed person could be defined as someone who is essentially free to organise their own work. Anyone who is not in that position (e.g. in terms of determining the price of their labour or their working hours) is not self-employed. Encouragement for such an approach can be found in the 'control criterion' that is well established in the USA. It breaks away from the 'personal subordination' criterion and recognises electronic networking as substantive dependency. Accordingly, anyone who for a certain period provides a service for another person in accordance with their instructions and receives payment in return is also classified as an employee. Court rulings (e.g., the FedEx case) have already confirmed this principle.

2.

The Commission is well aware that not all those working in the intermediate zone between dependent employment and self-employment can be covered by an extended concept of the employee. However, if this group is not to become lost to sight in a grey zone, this group also needs to be *re-categorised*. The obvious choice here is to extend the existing category of ‘*employee-like person*’. So far, this category has been used for small groups only (e.g. so-called ‘free collaborators in the mass media’). This status is associated with a number of social protection regulations, such as entitlement to paid holidays and care or study leave. Moreover, it is possible for employees in this category to enter into collective bargaining agreements. *This category can and should be developed.*

It would be logical also to amend the Collective Bargaining Act, according to which all individuals who obtain 25 per cent of their earned income from one client are to be regarded as ‘employee-like’. The European Court of Justice has already declared that collective bargaining agreements which regulate the employment and working conditions of self-employed individuals who are in a situation comparable to that of an employee are exempt from EU legislation on cartels and are thus legal. Putting them under the umbrella of the Collective Bargaining Act would be an option.

In other countries, the differentiation between (genuine) self-employment, employee-like individuals and employees has already passed into law. In the U.S. and Canadian legal systems, there is the new, third category of ‘dependent contractor’ in addition to the categories of ‘independent contractor’ (self-employed) and ‘employee’. A similar distinction has long been established in Italy and Spain. International comparisons can provide starting points for the further development of employee protection in Germany. It should be borne in mind that, as the new categories are introduced, there must be no watering down of the extended definition of employee and that the new and/or extended categories should confer the same protective rights as those enjoyed by dependent employees.

3.

Rights and protective norms that are indeed linked to work but are *independent of workers' legal status* must also be taken into consideration. There are three possible starting points here:

— Protective rights that are linked to the *source of risk* (e.g. purely technical health and safety or data protection regulations) and afford protection against the source of risk are already in place for the self-employed and agency workers. In the digital world of work, this protection is well applicable to the risks associated with data handling, bearing in mind rights to informational self-determination.

— *Protective norms that enforce the right to equal treatment* can also be applied in many cases without there having to be any personal subordination in the execution of work tasks.

— The introduction of *portable rights for employees* should equally accommodate workers' concerns with mobility and companies operating globally. It is true that § 613a of the German Civil Code and § 4 of the Act on the Improvement of Employer-Based Pension Schemes contain provisions on transfer of business ownership and changes of employer respectively, but these are exceptions and do not systematically regulate the individual employer-employee relationship. Employees' rights and positions should be made '*portable*' in order to protect employees' acquired rights against loss if they change employer or lose their job and make it possible to transfer them to their new economic and social circumstances.

A basis on which to build this portability already exists in the provisions of, and experience with, the legislation on holiday entitlement, on occupational pension and on working time credit schemes, as well as the social insurance scheme for artists and the industry-wide holiday schemes in the construction sector. For example, in the draft of the 'White Paper Work 4.0', published by the Federal Ministry of Labour and Social Affairs (BMAS 2016b), a personal development account is proposed, which could be further extended in conjunction with long-term working time accounts. Further proposals could be based on the 'compte personnel d'activités' or 'individual activity account' recently introduced in France. Its core idea is to make benefits no longer contingent on a person's job. Instead, every worker would have an account where their social benefits would be kept in the form of points regardless of employ-

ment status. Options and mechanisms of this portability have not yet been sufficiently explored.

Furthermore, compulsory membership of the statutory old age insurance scheme would seem to be necessary for the self-employed. Improvement of the voluntary unemployment insurance scheme for the self-employed should also be considered. In the case of platform workers, there needs to be clarification on the issue of how both customers and platform operators can be involved in financing these schemes.

4.

If, for some Germans, employment is no longer regulated by an employment contract but rather by the German Civil Code, which governs the legal relationships between private individuals, then '*social private law*' comes to the fore.

Members of society have rights regardless of their position in the world of work – particularly when they are the structurally inferior party in an unequal power relationship (e.g. in a tenancy agreement or consumer issues). This social private law hardly ensures that labour standards or other legal rights will be upheld but it does gain in significance when no other protective rights have taken effect in a digitalised world of work. In the case of crowd work, it can be shown, for example, that *consumer protection provisions under the law of obligations* could indeed be brought to bear in conjunction with the use of 'general terms and conditions of business' (→ **INCOME**). However, the more economically dependent crowd workers are, the more unlikely it is that they will actually seek to uphold their 'consumer rights'. For this reason, collective enforcement instruments are required here too, along the lines of the class action suits by consumer advice centres.

Copyright protection and utility and design patents should also become more significant in crowd work (and in digital work in general) (→ **INCOME**). However, the question is which regulations will actually have any effect on platforms headquartered abroad (see p.37).

All in all, '*social private and commercial law*' will become more important in all situations in which the concept of employee and its extensions prove to be inapplicable.

This *new normative framework* will be able to accommodate the *diversity of employment forms* that exist in the world of work and will call time on the creeping loss of the social and legal embeddedness, and the protection it afforded, that has characterised work and employment in Germany.

CONCEPTUALISING THE COMPANY ON THE BASIS OF ITS FUNCTIONS

The *dissolution of the company* is not a new process; it was being described as early as the end of the 1980s, when the processes of marketisation and decentralisation began. The principles of competition were assimilated into the company, management was made leaner, hierarchies were thinned out and more and more stages of the production process were outsourced. Now, against the background of digitalisation, a further shifting of the boundaries is being discussed; there is even talk of the ‘dissolution’ of the company, which is developing from a technical and organisational unit into a *digitally connected network*.

The Internet is giving rise to new forms of collaboration and networking, which can give rise to new value creation systems and value added chains and which in turn can produce new production structures. Employment and production are less tied to fixed locations if the means of production, physical objects on which work is performed, the organisation of the work processes and the accompanying communication can be brought together via the Internet. In globally integrated companies, various components of the value added have long been produced at very different locations.

Employees do not necessarily have to be present within the company any longer. The use of cloud platforms as hubs for the organisation of work have contributed to a change in company structures. They are being opened up to outsiders and everything is connected, which is made possible by Internet platforms. IBM calls this ‘working in the open’. Workers scattered across the globe can be deployed via the platform and integrated into the value added chain. Ultimately, the boundary between the inside and the outside is defined by the rights of access to the cloud platforms – and these rights can be re-

assigned as required. A company's permanent employees may work with employees of supplier companies, with independent contractors and self-employed workers and even with crowd workers and customers in a shared value adding process (BOES 2017). It is true that these phenomena are by no means universal, but they are extremely influential in determining the ways in which corporate structures are being conceptualised and shaped.

POINT OF CONTROVERSY

A NEW CONCEPT OF THE COMPANY

The company is not disappearing as technological progress and global networking forge ahead. Rather its form and organisational principles are changing, and with them its risk structure. More and more risks are being shifted to 'market participants', who previously worked as dependent employees and were protected by this status.

In case law, a firm is 'the organisational unit within which the employer, with or without his employees and using tangible and intangible resources, pursues certain operational objectives that are not limited to the satisfaction of personal needs' (from a May 2000 ruling by the Federal Labour Court). This definition is already more flexible than the standard concept of a company as being situated in a fixed location.

This notion of the localised company is being replaced by a definition of the company *as a functional unit*. In as much as an economic actor succeeds in creating the social ties required for his production processes and on that basis builds the transaction and control structures required to exercise his managerial prerogative, the result is to be regarded as a company. This is of great significance for labour law and codetermination because the various rights to information, consultation and codetermination are linked to the company (and to interpretations of the concept of the company).

By using a purely functional definition, it becomes possible to put forward a modern concept of the company. It is impor-

tant to note that this in no way makes the company any less important. Its material form thus does change, but its essence remains, as does its legal significance as an organisational unit.

The definition of the company as a functional unit has implications for the codetermination system. If the concept of the company is becoming ‘delocalised’, employers can no longer circumvent codetermination by fragmenting companies into small units, as the threshold for the right to establish a works council is five employees. At the same time, the new concept of the company opens up opportunities for works councils to enforce their rights of representation all the way along the value chain.

There is much to be said for supplementing the old concept of the company by placing the new concept alongside it, particularly in order to retain the employer function. Thus the existing codetermination arrangements and protective standards (such as higher industry-level minimum wages, for example) could be protected and the fragmentation of employment relationships into a multiplicity of short-term relationships avoided.

All this raises some fundamental questions for the social partners. What does it mean for social partnership if companies and industries ‘fluidify’ and it becomes increasingly impossible to draw clear boundaries between them? What form would effective trade union representation take in a network company, without trade unions’ poaching on each other’s territories?

PUTTING PROTECTION IN PLACE FOR EACH ASSIGNMENT

In the digital world of work, there is an increasing number of individuals who, instead of having an employment relationship and an employment contract, simply complete *assignments*. Most of these assignments are obtained via digital platforms. This so-called *crowd working* constitutes a new form of labour utilisation, still marginal in Germany. However, if developments in other countries are anything to go by, considerable increases are to be expected.

There are some 2,300 crowd working platforms worldwide (of which about 65 are operated from Germany). The World Bank estimates that turnover will reach about 25 billion dollars by 2020 and that the number of crowd workers will rise to some 112 million (KUEK et al. 2015). Even now, 750,000 people are already working on TopCoder (USA), 14.5 million on Freelancer (Australia), a million on Mechanical Turk (USA) and 700,000 on Clickworker (Germany) (KLEBE 2016). According to one study, average earnings are two dollars per hour (EUROFOUND 2015; IRANI/SILBERMAN 2013). Even if crowd working in Germany is still primarily something people do to supplement their incomes from their main jobs, it seems necessary to explore the question of how it might be possible not only to ensure that this form of employment pays a living wage but also to safeguard all the standards that have been linked to employment.

Since platforms see themselves not as employers but as brokers or intermediaries, crowd workers are treated as self-employed workers. Consequently, neither the usual wage setting mechanisms nor the statutory minimum wage apply to them, nor are they covered by any of the other forms of protection linked to employment.

One of the reasons adduced to justify the lack of social and labour standards in crowd and click working is that they constitute a global work space that cannot be regulated at the level of the nation state. Nevertheless, there are ways of providing the same kind of protection for this kind of work as that which applies to standard employment. Even though crowd work is, by its very nature (assignments allocated via digital platforms), more difficult to regulate than dependent employment by means of labour and social security law, standards can nevertheless be introduced.

POINT OF CONTROVERSY

'PURCHASER PRINCIPLE' FOR DIGITAL WORK

One promising starting point for the safeguarding of standards in crowd work that the Commission discussed is the introduction of a compulsory '*purchaser principle*' for digital work.

This means that when a German company purchases services via a digital platform, German or EU law would have to apply, i.e. the standards in force in Germany with regard to (minimum) wages, tax treatment and labour law. Thus the decisive factor in determining contractors' pay and working conditions would not be the location at which the service is produced but rather in what country the purchaser is located. This proposal was the subject of a heated debate within the Commission, as there still many issues in need of clarification. The Commission did agree, however, that the purchaser principle could be a game changer. In many ways, it is very similar to other approaches. The German Act on Real Estate Agents, which was enacted in 2015, is also based on the principle that 'whoever purchases the service also pays for it, and his or her governing law and place of jurisdiction shall apply'. Of even greater interest, however, are the parallels with the EU Posted Workers Directive. It is based on the notion that, in the case of posted workers, the country of employment or place of work matter, not the country of origin. Posted workers' pay and the labour standards that apply to them depend on where they carry out their work. In essence, the 'equal pay for equal work at the same location' principle, as espoused by the EU Posted Workers Directive, means the same thing.

In the Commission's view, however, the analogies with the Posted Workers Directive also show that a number of unresolved issues around the purchaser principle still have to be clarified.

The first issue is its *scope*. The Posted Workers Directive applies only to workers seconded to another EU member state. It was only because the governments of the member states were able to agree on the application of the country of employment principle that the binding legal regulation in the form of the Posted Workers Directive was possible. If the services provided via digital platforms involve purchasers and providers who are both located in an EU member state, then a similar regulation in European law would be at least

conceivable. However, transactions in which the purchaser and/or provider reside outside the EU would not be covered by European law. A European regulation making the purchaser principle binding would be a considerable gain, but it would be too narrow in scope, since digital platforms in their role as intermediaries often operate globally.

— A second problem, again by analogy with the EU Posted Workers Directive, concerns the *status* of most crowd workers. They are normally not dependent employees but self-employed workers. The Posted Workers Directive essentially applies to dependent employees who are posted from their home company to the contracting company in another EU member state in order to carry out given tasks. The directive, however, can easily be circumvented if employees are operating as contract workers in other EU countries, which means they are officially classed there as self-employed.

Thus in the case of work that is assigned via digital platforms and regularly carried out by self-employed crowd workers, it becomes clear how important it is to consider the idea of introducing a binding purchaser principle from the outset in conjunction with a fundamental *redefinition of the concept of employee* (see above).

— A third point that will have to be considered more closely in conjunction with the introduction of a binding purchaser principle is the question of *which services* and which digital mediation platforms are to be covered by it. In particular, a distinction is to be made between platforms that offer services strongly linked to a specific location and those that offer service work across the world. In the case of platforms offering services tied to a location, as is often the case in the so-called ‘sharing economy’ (Uber being the archetype here), it should be considered whether or not the platform operator should itself be given the legal status of employer, in accordance with the law in the country in which these services are provided. On the other hand, the binding purchaser principle – based on the purchaser’s country of domicile – would apply primarily to services without a strong local element that are assigned globally via platforms.

→ FOOD FOR THOUGHT DIGITAL TOOLS FOR OPENNESS AND COMMUNITY BUILDING AROUND PLATFORMS

People who earn their livelihoods from crowd work cannot always to be classified as ‘precarious workers’. However, they are individually responsible for many arrangements connected with their work and usually work in isolation. Consequently, the Commission proposes that *a collective communications infrastructure* for the exchange of information and advice should be built for crowd workers.

There are already models that can be used as starting points. The German IG Metall trade union has developed the website www.fair-crowdwork.org as a platform for crowd workers that acts as a vehicle for networking, creates openness and transparency about platforms and offers advice. Whereas it is standard practice for platforms to rate their crowd workers and, as the case may be, reject them for any future assignments, the boot here is on the other foot: it is now crowd workers who assess the platforms on the basis, among other things, of criteria such as payment, communication and quality of work. Ver.di also operates an advice platform for crowd workers (‘I’m worth more’). The ‘Turkopticon’ tool can be used to assess work providers. Assessments can be seen when selecting new assignments via ‘Amazon Mechanical Turk’ (IG METALL no date; VER.DI no date; IRANI/SILBERMANN 2013).

Codes of conduct are also being drawn up that lay down rules for fair collaboration. More radical are plans to set up platform cooperatives, i.e. platforms owned by users. The idea is to combine platform technology with good working conditions and the non-profit business model of a cooperative. Trade unions could provide legal expertise, particularly on labour law.

SAFEGUARD STANDARDS ACROSS THE BOARD

The debate on social inequality generally focuses on differences in wealth and income. However, this emphasis means that we tend to lose sight of the fact that the differentiation of employment forms also gives rise to differences in job security, favourable working and employment conditions and the chances of enjoying ‘decent work’.

Examination of the data on working and employment conditions in Germany reveals a *dividing line linked to coverage by collective bargaining agreement*. In those areas of the economy where collective agreements apply and works councils are active, employees enjoy far better conditions and protection. The wage spread is narrowest in countries with high rates of coverage by collective agreement, while in countries with low levels of coverage wages at the bottom end of the distribution tend to be compressed at the level of the minimum wage.

According to the German Federal Statistical Office, 46 per cent of employees in western Germany (the former democratic West) were covered by collective agreements in 2014; the figure for eastern Germany (the former communist East) was 39 per cent. In many areas of manufacturing industry coverage is relatively high (e.g. 85 per cent in the energy sector), although the long-term trend is downwards. In service occupations, on the other hand, the rate of coverage is considerably lower (e.g. 24 per cent in the hospitality industry). Furthermore, there are differences by business size. Full-time employment, which tends to go hand in hand with high union density, is less widespread in the service sector, and in the new labour market segments (e.g. in the IT sector) many companies have no codetermination. In general terms, there has been a decline in *coverage by industry-wide collective bargaining agreements*. *Qualitative changes within collective agreements* are also emerging due to increases in company agreements concluded as supplements to or replacements for industry-wide agreements, as well as increases in derogation and differentiation clauses to industry-wide agreements. There has also been a decline in *works council density*, leading to the erosion of those institutions that breathe life into collective agreements at the company level.

→ FOOD FOR THOUGHT EXTEND COVERAGE BY COLLECTIVE BARGAINING AGREEMENT

The Commission regards *strengthening of coverage by collective bargaining agreement* as one possible approach in the fight against social polarisation. *Declarations of general applicability* are an important instrument for extending that coverage; such declarations, which may be issued at the request of the social partners, make the provisions of a collective agreement binding for all companies in the industry in question, even those that do not normally adhere to the industry's collective bargaining agreements. However, the number of declarations of general applicability has fallen considerably in recent years – the hurdles were obviously too high. For this reason, the Commission welcomes the 'Act to Strengthen the Autonomy of Collective Bargaining' (Tarifautonomiestärkungsgesetz) that was passed by the German Federal Parliament in 2014 and which makes it easier to declare collective agreements generally applicable. The hurdles have been lowered significantly. Previously, the rule was that at least 50 per cent of employees in the industry had already to be working in a company bound by collective agreement. Declarations of general applicability often used to fall at this hurdle, although it is precisely in industries with low levels of coverage that they would be particularly beneficial.

The 50 per cent threshold no longer applies. Instead, when a ruling for general applicability is solicited, the Federal Ministry of Labour and Social Affairs, in consultation with a committee made up three representative of each of the employers' and employees' umbrella organisations (the so-called collective bargaining committee or *Tarifausschuss*), has to determine that declaring the agreement generally binding would be in the 'public interest'. The legislation does not define the 'public interest' in any greater detail. In order to make the legislation more effective, the Commission makes the following recommendations:

— *Clearer definition of the public interest:* A declaration of general applicability is regarded to be in the public interest when a) the collective agreement has become the principal determinant of working and employment conditions in its area of application or b) the effectiveness of rule setting by collective agreement has to be protected against the consequences of undesirable economic developments. In

practice these criteria are obviously too abstract to be effective. For this reason, the Commission recommends that consideration be given to ways in which the public interest can be defined in more concrete terms. The public interest could be specified more closely as follows: An overriding public interest shall be deemed to exist when the share of low pay in a sector is at least 20 per cent or when labour turnover in a sector is very high so that it is very unlikely that collective agreements will be concluded. This regulation has been introduced in Switzerland with the tourism industry in mind, where labour turnover is very high.

— *Introduction of industry-level dialogue in the service sector:* Tripartite dialogue at industry level between policymakers, trade unions and employers is a means of finding constructive solutions. However, such arrangements are virtually non-existent in the *service sector*. Yet they are important because industrial relations here are not comparable with those in manufacturing. In home care services for the elderly, for example, private, non-profit and public providers compete with each other. Consequently, many parties have to reach agreement for sector-wide rules to be put in place.

— The Commission further recommends that *collective agreements* should also be *opened* up to groups of workers who are not employees but have a similar need for protection. One way of doing this would be to *reform the legislation on collective bargaining agreements* in such a way that the right to negotiate collective agreements is not restricted to those who work mainly for one client but also applies to those who work for several clients yet are in a position of dependency nevertheless. This would herald a paradigm shift, since the self-employed working for several clients have been regarded as competitors so far. A reform would turn them into *collective actors* who would be able to fight collectively for higher pay. Until now it has been argued that competition law (cartel law) prohibits such collective negotiations as ‘illegal price-rigging’. However, since many self-employed workers are in a very weak position in the market, it is debatable whether competition law is in fact the right frame of reference for them or whether different objects of legal protection come into play in accordance with the principle that ‘civil rights take precedence over competition law’.

→ FOOD FOR THOUGHT STRENGTHEN COVERAGE BY COLLECTIVE BARGAINING AGREEMENT THROUGH TARGETED PUBLIC PROCUREMENT

In the Commission's view, public commissioning offers a good starting point for strengthening the 'collective agreement' principle. Commissioning bodies at federal, *Land* and local authority level in Germany currently spend some 400 billion euros on the public procurement of goods and services; this equates to 17 per cent of Germany's GDP. In the Commission's view, the state is not a standard market participant. It has a particular role to play as a role model and besides cost effectiveness must also take into account higher-level, socially worthwhile concerns. These include protection of market participants from price undercutting as a result of wage dumping and from the circumvention of German and international labour and social security law.

The Commission argues that the public authorities should make *compliance with collectively agreed pay scales* (compliance with representative collective bargaining agreements) and membership of an association that concludes collective agreements a *compulsory criterion in awarding contracts* in order to strengthen the collective bargaining system. This would also cover outsourced work. Such compliance clauses are permissible under German constitutional law with regard to representative collective agreements. The law on public procurement has already been reformed in Germany and Europe in recent years. The 2014 EU directives on public procurement have shown that social criteria can no longer be described as factors that are not to be taken into account in public procurement.

PROTECT JOBS DURING RATIONALISATION

The digital transformation not only brings with it new business models but also harbours enormous *potential for rationalisation* through automation. This is not a new phenomenon for manufacturing or service work – and there are tried and tested methods of dealing with it in order to manage job losses in a socially acceptable way. Bearing in mind that the pace of change in the labour market may well quicken, these instruments should be made viable for the future and promoted as options for crisis management throughout the world of work.

FOOD FOR THOUGHT SAFEGUARDING JOBS THROUGH WORKING TIME REDUCTIONS AND RESKILLING

Models for reducing working time in order to safeguard jobs date from as far back as the 1990s. Workforces collectively accepted reductions in working time and incomes in order to protect jobs. The best-known example of this was the four-day week at Volkswagen.

Since 2001, works councils have been able to put forward proposals for safeguarding jobs and employers are obliged to consider such proposals. Since 2009, companies have had at their disposal the very effective instrument of (*temporary*) *employment protection*. This legislation makes it easier for companies to put in place *cyclical short-time working arrangements* and relieves employers of the burden of the associated costs, as the government compensates employees for part of their income losses due to the temporary reduction in working hours by paying them the so called ‘short-time allowance’. This applies particularly when the workforce also undergoes *reskilling* during the period of short-time working. In the metalworking and electrical engineering industry, the social partners already managed to agree top-up payments for the short-time allowance and thereby limit the financial losses suffered by workers on short time even further, to safeguard jobs for the period of short-time working and to extend works coun-

cils' rights of codetermination (cf. the provisions in the collective agreement on 'Short-time working, reskilling and employment protection' concluded between IG Metall and the Südwestmetall employers' association that was in force until 2010).

Bearing in mind the structural change that will be brought about by digitalisation, the *short-time allowance*, an instrument that came into widespread use in the financial and economic crisis, should be developed further. For example, businesses have hitherto made too little use of the opportunities for *combining short-time working with reskilling*. Either because there were no plans in place for reskilling programmes or because employees were reluctant to take part in such programmes, the funding made available by the Federal Employment Agency has not been fully used. Consequently, companies should put in place plans for reskilling as a preventive measure (→ [EDUCATION AND TRAINING](#)).

However much companies try to adapt to digitalisation, not all of them will come to terms with it quickly enough. For example, medium-sized suppliers are at risk of insolvency if they do not 'get up to speed' with digitalisation; else they will drop out of the integrated value chains, a threat that hangs over 30 per cent of automotive component suppliers in Germany (DIEZ 2016). The companies affected can get back on their feet again, but they will need time and support.

POINT OF CONTROVERSY DEVELOP TRANSITIONAL COMPANIES FURTHER

Transitional companies (Transfergesellschaften) are a tried and tested instrument for use in company insolvencies or restructurings that can be *further developed* as the pace of structural change accelerates. Employees who have lost their jobs or whose jobs are at risk due to substantial changes in their company can be taken on by the transitional company, usually for a 12-month period, to facilitate finding new jobs. There was a controversial debate in the Commission about

the proposal that the rules on transitional companies should be amended in such a way that employees are able to return from the transitional company to their former company after the restructuring and undergo further training during their time in the transitional company. The transitional company could thus operate as an ‘internal start-up’.

It was generally agreed that greater use should be made of transitional companies for further training. Reskilling is still being neglected in the negotiations on redundancy programmes, so a rethink is required here. The idea of a special short-time allowance for workers in companies adjusting to the digital transformation, as recently proposed by IG Metall, was well received by the Commission.

Whereas for large segments of the working population standard employment used to be a means of *permanently securing their livelihood*, this is clearly no longer the case. In a dynamic, globally networked economy, job security is no longer certain. The more intense the competition in certain segments becomes, whether as a result of rationalisation effects or labour migration, the more precarious life in the zone of social decline as well as in the middle strata of society is perceived to be (CASTEL 2000; CASTEL/DÖRRE 2009).

Even though unemployment has always been a personal crisis situation, the reform of the social assistance system has certainly exacerbated the difficulties. Social assistance was integrated into the system for the more generous unemployment benefits, which can now only usually be drawn for 12 months only (as opposed to 24 months previously) before social assistance kicks in. Since the changes (commonly referred to as Hartz reforms) were enacted, unemployment has become even more strongly linked to concerns about downward mobility and impoverishment – and not being able to regain one’s previous status, since the rules on what constitutes a reasonable job offer for those on social assistance after their unemployment benefits have run out stipulate that offers of work even below a job seeker’s level of skill and qualification cannot be rejected without good cause. Furthermore, the employment agencies (job centres) prioritise placement in work over extensive reskilling. In many cases, fragmented ad hoc

measures are all that is provided, rather than more wide-ranging re-skilling programmes (BLÄSCHE et al. 2017). In recent times, out of around 1.3 million unskilled unemployed individuals, barely 50,000 per year have embarked on a training programme with the aim of obtaining a vocational qualification. The number of individuals on social assistance fell by nine per cent between 2010 and 2015, but expenditure on further training for this group was cut by 26 per cent. Experts consider this to be short-sighted, since recent studies have shown that extensive re-skilling certainly pays off (it increases the likelihood of finding employment by 20 per cent), though not overnight.

POINT OF CONTROVERSY CURBS ON DOWNWARD MOBILITY

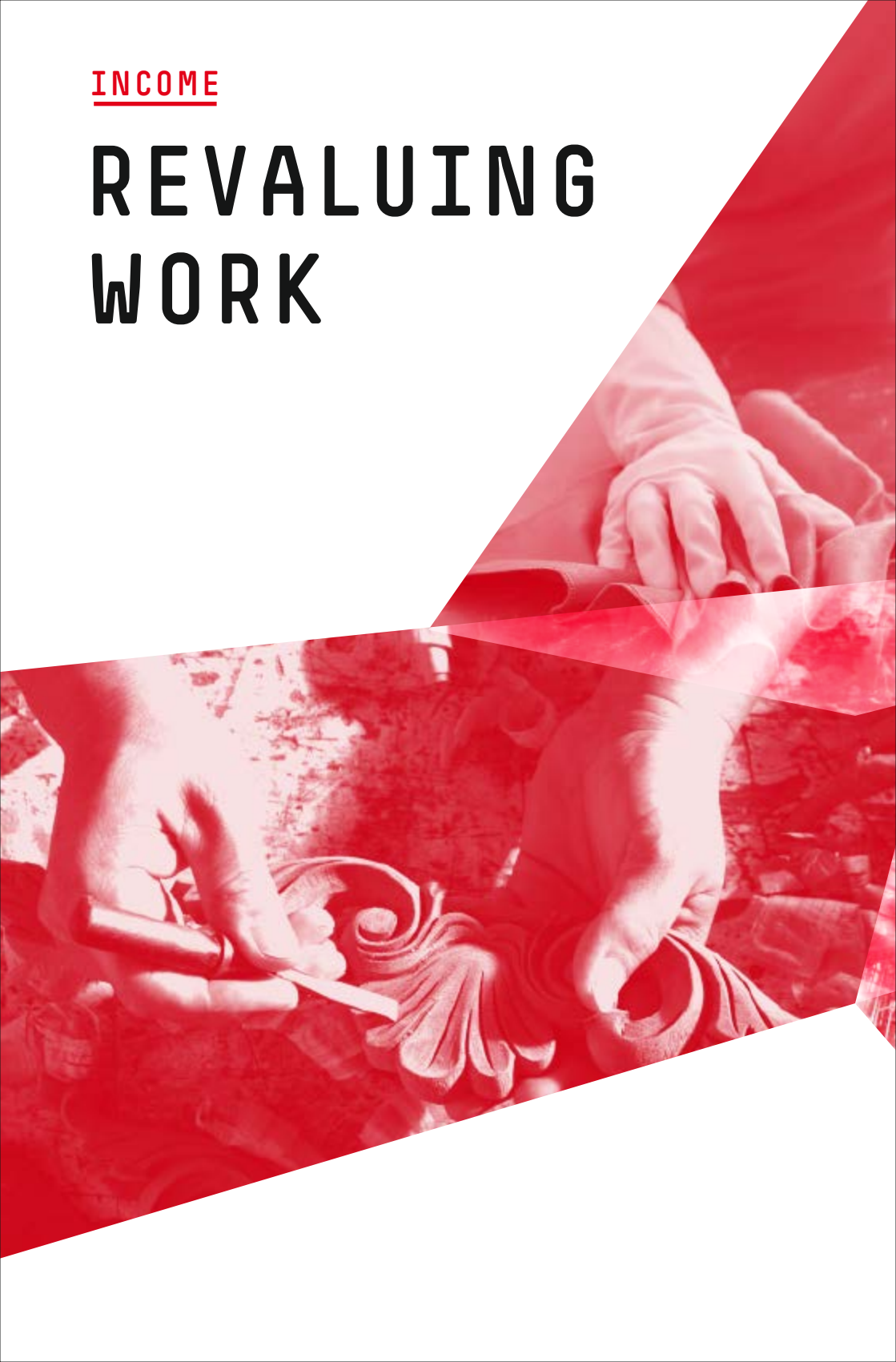
In view of digitalisation's potential for automation and rationalisation, the Commission discussed measures that could function as *curbs on downward mobility*:

- The planned introduction of a *reskilling unemployment benefit* was broadly welcomed. This instrument combines an extension of the period of entitlement to unemployment benefits with re-skilling, thereby conceivably offering many people the possibility of re-entering the labour market (possibly with a different job).
- Despite intensive re-skilling efforts, not all those who become unemployed will be able to gain a foothold in the primary labour market straightaway. An initiative from North Rhine-Westphalia is worthy of consideration. The state government there has taken up the trade unions' call for the establishment of a *new social labour market* for the long-term unemployed.
- The idea of introducing a *new form of short-time allowance* was discussed. The IG Bau construction trade union is seeking to use this instrument to secure the transition into retirement for older workers with health problems.

Although the Commission did not reach agreement on any particular instruments, there was consensus on the need to give urgent consideration to ways of curbing downward mobility.

INCOME

REVALUING WORK





**GUARANTEE
LIVELIHOODS,
REWARD
ACHIEVEMENT**

WHERE DO WE STAND?

If it would be simplistic to regard employment simply as a means of earning money, it would be naïve to ignore the fact that people have to secure the material necessities of life and therefore need an income. Even if they have a particular skill or qualification that enables them to protect the position they have achieved in the labour market and in the workplace or in the social networks they have built up, they are, nevertheless, always dependent on the demand for their labour. Consequently, the *remuneration of work* is and will continue to be a crucial factor in the negotiations between the parties involved. This applies to dependent employees and the self-employed alike. Even freelancers, crowd workers and artists, who are usually assumed to enjoy a very considerable degree of freedom in their work, have to safeguard their incomes and protect themselves by means of contracts, patents or usage rights.

INHERITANCES DETERMINE OPPORTUNITIES. Besides income, *wealth* also plays a part in determining the degree of financial freedom an individual enjoys; only for a certain section of society does the prospect of inheriting wealth open up scope for planning for the future. Transfers of wealth from inheritances totalled 38 billion euros in 2014, with a further 71 billion transferred in the form of gifts. According to the German Federal Statistical Office, this constituted an increase of 55 per cent in the volume of inherited and gifted wealth over the previous year. Business assets represented only 45 per cent of this inherited wealth, the rest being private assets. The volume of inherited wealth is likely to increase enormously in the coming years: for the period 2012–2027, it is put at 1.45 trillion euros for those 70 or over (STATISTISCHES BUNDESAMT 2015a; GRABKA/TIEFENSEE 2017). Individuals with assets of over a million euros are not only more likely to inherit but also to have above-average household incomes.

WOMEN HAVE LESS MONEY. There is generally a large gap between the sexes: women on average earn less than their partners. This is due in most cases to the division of labour within families and the amount of paid work women do. At the same time, women's employment tends to be concentrated in those segments of the labour market in which hourly wages are low. Moreover, many of the available jobs offer only a small number of hours' work per week. Single parents are the group in Germany at greatest risk of poverty (PABST/ASMUS 2017).¹

THE INCOME SPREAD HAS BECOME A POLITICAL ISSUE. The diagnosis of a 'strong middle' in Germany, in which a breadwinner's wage could support a whole family and there were regular collectively agreed wage increases, had been overtaken by reality by the year 2000 at the latest. The income gap had been widening constantly and precarity and inequality had become perennial topics.

Although the incomes of private households rose by 12 per cent in total between 1991 and 2014, the various income brackets evolved very differently. Middle income groups saw their earnings rise by more than eight per cent, but for the highest earners pay increased by more than 26 per cent. In the lower income brackets, on the other hand, real wages actually declined (GRABKA/GOEBEL 2017). Cross-European comparison shows that the low-wage sector in Germany, at 23 per cent of all employees, is one of the largest in the EU. The low-wage sector² is stagnating at a high level (MÖLLER 2016).

THE CAUSES OF THE SOCIAL DIVIDE ARE MANY AND VARIOUS. The reasons for the increased income inequality include, among other things, the expansion of employment relationships offering less than full-time hours (→ **PARTICIPATING IN THE WORLD OF WORK**) and the growth of the service sector, where wages in some areas are significantly lower than in the manufacturing industry. Movements in the labour market have also played a part: within the various industries, pay differentials between firms have increased, so that employees are now divided between better or poorer paying firms.

The *declining rate of coverage by collective bargaining agreements* also has effects. Low pay is noticeably more frequent outside of collective agreements; in companies bound by collective agreements, moreover,

1 In 2015, the risk for single parents of falling into poverty was 44 per cent. Almost 40 per cent of single parents receive social assistance, most of them wage supplements because of low pay.

2 Workers in the low-wage sector earn less than two thirds of the median wage.

the differences in pay between the various groups are smaller. However, low pay and short working hours inevitably generate costs for the state in the form of top-up and benefit payments. The number of seniors relying on social assistance has increased from 258,000 in 2003 to 536,000 in 2015.

Social costs also accrue: a precarious income situation and uncertain employment prospects have a negative influence on the decision to start a family or have more children (GOEBEL/GIESECKE 2009) and educational investments in children's futures are made more difficult. What is more, low pay, low levels of education and training and a precarious employment status are associated with reduced life expectancy.³

3 CHETTY (2016) identifies a difference of 15 years between the richest and the poorest males in the USA. For Germany, the Robert Koch Institute puts the differential at 10 years (RKI 2017).

SERVICES UNCOUPLED? Except for the crisis years of 2008/2009, real wages in the manufacturing sector had risen significantly since the early 1990s; in the service sector, however, except for the ICT industry, this was not the case at all. Up until 2007, wages had actually been falling; it was not until 2014 that they started to rise again slightly, albeit without reaching the 1991 levels in all areas (STATISTISCHES BUNDESAMT 2016d).

While it is true that gross hourly rates of pay are likely to rise throughout the economy, the dynamic does vary from sector to sector. In agriculture and many service industries in particular, any wage increases are expected to be below average. Poorly paid service work is mostly done by women. Their share in the low-wage sector is almost 70 per cent. However, the outsourcing of many activities from conventional manufacturing companies has also relegated a not inconsiderable number of males into the low-wage sector.

VALUING WORK JUSTLY IS A KEY SOCIAL POLICY ISSUE. *Differences in the remuneration* of work are a controversial issue. Although differences in income for different qualifications and types of activity are perceived as fair, the situation changes when different rates of pay are offered for the same work or for work of equal value.

Care work is always undervalued. Although the economy depends for its very existence on such work, it was not acknowledged as 'work' for a long time. A particular aptitude for care work was attributed to women simply by virtue of their gender. The consequence is a *hierarchisation not only of different types of work but also of the sexes* that con-

tinues to shape society to the present day. The more the paid work in question resembles work in the home and the more women are employed in a segment of the labour market, the lower wages turn out to be. The gender pay gap, which indicates the level of wage discrimination against women, is 21 per cent (STATISTISCHES BUNDESAMT 2016C).⁴ The resultant differences in earnings are the cause of a persistently unequal division of domestic and care work. They act as an incentive for the partner in a couple with the lower income to reduce their working time or withdraw temporarily from the labour market. Men are becoming increasingly critical of this pre-structuring of family decisions.

⁴ It is still 8 per cent when individuals with the same education, job and working time are compared.

WHAT SHOULD WE BE PREPARING FOR?

The debate as to what degree of social inequality is reasonable or acceptable will intensify. Studies show that people evaluate their quality of life more highly in societies with lower levels of wage inequality. *Economic productivity* is also higher. Inequality has the potential to inhibit growth and to be destabilising at the macroeconomic level because low-income households are unable to afford investment in education and health and domestic demand is heavily dependent on disposable income and the income prospects for the great majority of the population (BEHRINGER et al. 2016).

As a result of increasing political pressure, criteria that link awarding public contracts to minimum social standards and minimum pay have been incorporated, for example, into the Public Procurement Act (SACK et al. 2016). If collectively agreed wages continue to be raised by the same percentage for everybody, including the lowest income groups, and if the statutory minimum wage continues to be raised in proportion to these collectively agreed wage rises, then the existing inequality will not be reduced. Since low incomes mean low pensions, income policy decisions may in the long term also be contentious from a social policy perspective.

SERVICE WORK WILL CONTINUE TO INCREASE. Demographic change and increasing participation rates among women will lead to increased demand for social services. If pay for such work remains as low as it has been to date, then precarious employment and income conditions are bound to expand.⁵ If there is no change of direction here, many people will remain dependent on multiple and side jobs in order to make ends meet.⁶ In view of the increasing demand for labour, international labour migration will continue to increase. This means mainly women who come from other countries to

⁵ According to forecasts, staffing requirements in the care sector will rise to one million full-time workers by 2050 (SCHULZE 2012). However, wages in this sector are 17 per cent below the average for all employees (BOGAI et al. 2015).

⁶ In 2015, two million workers had at least two jobs. Since 2011, the figure has risen by 15 per cent (STATISTISCHES BUNDESAMT 2017d).

take on care work. In doing so, however, they leave gaps in their own families, which in turn are filled with migrants from even poorer countries.

PLATFORM WORK INFLUENCES THE INCOME DISTRIBUTION. Platforms create new ways of accessing the labour market as well as a sometimes cheaper supply of (additional) labour that exacerbates the competitive pressures among workers. A number of questions on remuneration remain unresolved. A growing group that is hoping for new employment and earnings opportunities as self-employed workers has found itself facing considerable risks. Not only is demand for their work often unpredictable but it is also unclear how to ensure payments are made and how to deal with standby times. While individuals with particular qualifications or skills can achieve significantly higher incomes via platforms than in a conventional company, a large group has been using the format to make some additional money, roughly what they might earn in marginal part-time jobs (the so-called ‘mini-jobs’). According to the DIW (the German Institute for Economic Research), many self-employed workers earn less than the minimum wage.⁷

WHO IS POCKETING THE DIGITAL DIVIDEND?

Technological change is credited with increasing value added in several regards. Firstly, it creates completely new options for business models that make extensive use of the data that the users of digital media (more or less consciously) make available. Enormous potential for rationalisation is also imputed to digitalisation: digital equipment and software can support work processes, or work processes can be fully automated and thus extremely accelerated. True, the digital dividend is already allowed for in the lively debate on the unconditional basic income; however, the statistics do not show any concrete productivity effects (HORN et al. 2017; HÜTHER 2016). It is not yet agreed whether we are dealing with a lag effect, deficient measuring procedures or a false assumption.

In general terms, the ways in which digital media are used raise questions about enjoying the benefits. When knowledge is shared in chats, blogs and collaborative formats, consumers are shifting into the role of co-producer. Platform operators benefit from their contri-

⁷ Seventy-one per cent of crowd workers earn 500 euros or less per month from this kind of work. For 79 per cent, crowd work is a side job; only for 21 per cent does it constitute their main source of earned income (LEIMEISTER et al. 2016).

butions but do not generally give co-producers a share of the proceeds. This raises the same copyright and property rights issues that have always been important for the self-employed and their output. Although this may be of no concern to many users, those who see things differently have so far lacked the right to establish claims to their output.

WHERE CAN WE BEGIN?

The arenas in which pay bargaining takes place have become more diverse. Service work is expanding, but only in a few sectors does this produce healthy incomes. In social services, for example, wage levels are extremely modest. At the same time, new areas of activity are emerging (e.g. the platform economy) in which the usual wage-setting instruments hold only limited sway, if any at all. So we have to clarify how tried and tested mechanisms for producing a fair wage distribution can be strengthened and, where necessary, how new ones can be found. The distribution debate has returned to the political arena, giving fresh momentum to the matter.

RAISE THE LOWEST INCOMES

Strengthening coverage by collective agreement and halting the spread of precarious employment can be seen as the most important starting points for combatting social inequality (→ [PARTICIPATING IN THE WORLD OF WORK](#)). In a context in which no turnaround was in sight in either of these areas, pressure increased for the establishment of a wage floor. After virtually all EU member states had moved forward on this issue, a statutory minimum wage was introduced in Germany as well in 2015. Since the beginning of 2017, the minimum wage has been set at 8.84 euros per hour. Its introduction was blocked for a long time; Germany was seen as lagging behind the rest of Europe in providing protection for the lowest income groups. The fears that the minimum wage would thwart job creation have proved unfounded.

POINT OF CONTROVERSY MOVE AWAY FROM PROPORTIONAL WAGE RISES?

The introduction of the minimum wage led to significant pay increases, particularly in service industries such as catering, distribution and logistics. However, the minimum wage is just an absolute lower limit that cannot provide a decent living standard in the long run. This raises the question of what other mechanisms might help to raise wages for the lower income groups and *narrow* the considerable *wage spread* in Germany.

The Commission's principal recommendation in this regard is to *strengthen coverage by collective bargaining agreement* (→ **PARTICIPATING IN THE WORLD OF WORK**), since the wage spread in sectors covered by collective agreements is considerably smaller. Greater attention should also be paid to collectively agreed *minimum wages at industry level*.

However, the proportional wage and salary increases that usually result from collectively agreed pay rises actually cement wage inequality. Everyone benefits from the rises, it is true, even the lowest income groups. However, the ratio between the upper and lower income groups remains unchanged. The question of whether there should be a shift away from proportional wage increases in the light of this fact was a controversial one for the Commission.

Disproportionately high increases for the lower income brackets have so far been relatively rare occurrences. Those in favour recommended that this practice should be extended. One example is the agreement concluded in the public services on the state (Länder) level. In the first stage, a rise of 2 per cent with a minimum of 75 euros is scheduled. This means that for a wage of 2,000 euros there will be a percentage increase of 3.75 per cent, for 2,500 euros it will be 3 per cent and for 3,200 euros the rise will be just 2.3 per cent.

So far, the statutory minimum wage has been raised only subsequent to collective bargaining agreements, i.e. the increases have been aligned with the collectively negotiated rises. Consequently, the minimum wage will not reach the level of a living wage, not even in the long term. As a result, voices in the Commission argued that *increases to the minimum wage* should be *disproportionately high*.

At the same time, there would seem to be a *need to review* what will

constitute an adequate minimum wage that will secure workers' livelihood. Already being discussed are criteria such as securing a pension above basic subsistence level, alignment with the European Social Charter and comparability with minimum wages in countries of similar economic strength (e.g. France: 9.76 euros).

POINT OF CONTROVERSY INTRODUCTION OF MINIMUM FEES?

If the number of people taking on *assignments* in order to earn their livelihood or some extra money increases as online-based work expands, then a *minimum fee* could be introduced as an equivalent to the minimum wage. Many questions on the legal and practical implementation remain unresolved, but there are already fee schedules in many professions that also stipulate such minimum fees and ensure a living wage.

HALT THE EXPANSION OF THE SHORT-HOURS SECTOR

Besides the low-wage sector, the growing *short-hours sector* is also creating a major problem. This includes everyone in marginal part-time jobs (the so-called 'mini-jobs') as well as those employed part-time for less than 20 hours per week. These employment forms are not always chosen voluntarily: 48 per cent of employees working up to 20 hours per week would like to work longer hours, while about 30 per cent of 'mini-jobbers' hope to enter into a standard employment relationship. Women are significantly more likely than men to want to work longer hours or to move into standard employment (SEIFERT et al. 2016; FISCHER et al. 2015). Furthermore, the short-hours

segment is usually not very remunerative because there is a link between short weekly working hours and low hourly rates of pay. Employees in this sector are also disadvantaged in terms of advancement and further training, since companies invest less in their development. Whole industries (e.g. retailing and catering) now depend on these short-hours jobs. In regional terms, short-hours jobs are particularly widespread where the employee support infrastructure is inadequate.

At the beginning of 2017, according to the Federal Labour Agency, some 7.3 million workers were employed in mini-jobs; for 2.6 million of them, these were side jobs. For the remaining 4.7 million, the mini-jobs were the primary income source; of this group, about two thirds were women (BA 2016a; 2017c). Anyone holding one or more mini-jobs and whose total income from such marginal part-time employment is less than 450 euros per month pays no tax on those earnings. This exemption is granted regardless of whether the household has other, taxable income. Since 1 January 2013, marginal part-time employees who start a new mini-job have in principle been liable to pay into the statutory old-age insurance scheme; however, one can apply for an exemption. This option is much used: only one in five mini-jobbers actually pays in.

Once workers take a job in the short-hours sector, they are often stuck there permanently and will not accrue sufficient pension entitlements to guarantee their independence in old age. Mini-jobs are rarely a bridge into standard employment.

→ FOOD FOR THOUGHT SAY GOODBYE TO MINI-JOBS AND OTHER SHORT-HOURS PART-TIME JOBS

The Commission recommends that the trend towards marginal part-time employment and other short-hours part-time jobs be halted. This could be approached from two angles:

- Firstly, the *care-work infrastructure* could be further developed to give employees greater scope to increase the number of hours they work. Shift work, weekend work and night work are all increasing in the expanding service sector. In order to enable parents with depend-

ent children, and particularly women, to extend their working times, the number of genuine *all-day schools* should be considerably increased. German elementary schools have traditionally finished at around 1 p.m. (and secondary schools not much later). Many 'all-day schools' do not extend instruction into the afternoon but offer extra-curricular activities only, without an iron-clad guarantee that pupils will be supervised until a certain hour, thus requiring parents working full time to seek out day-care after all.

And since an increase in provision of care at the beginning and end of the day will be unavoidable, foreseeable conflicts must be resolved. The needs of service users must be discussed in conjunction with the time preferences of service providers. An example of such negotiating processes is the local government project on 'Urban time policies' ('*Zeiten der Stadt*'), which aims to harmonise interests (MÜCKENBERGER 1998) (→ **FRAMEWORK FOR CHANGE**).

Secondly, the legislature should *abolish* or phase out the numerous *incentives* for part-time work and mini-jobs. Until now, the 'splitting' system for assessing married couples' tax liability, the free health insurance scheme for spouses and dependent children and the tax and social security concessions associated with mini-jobs have all conspired to subsidise the secondary-earner model. The consequence is that one spouse, usually the woman, remains confined to the short-hours segment. This subsidising of mini-jobs is no longer in tune with either the changes in women's career aspirations or men's increasing involvement in the family; it is also inconsistent with the reformed law on maintenance payments, which requires parents to secure an independent livelihood after divorce.

The Commission proposes that income from marginal part-time and standard employment should be treated equally and that the 'splitting' system should be phased out.

In addition to a reform of mini-jobs that seeks to modify workers' behaviour, it would also be possible to tackle the supply side, i.e. to organise work in such a way as to offer sufficient hours to enable individuals to earn a living wage. *Unconditional basic working hours* could be offered as an alternative to an unconditional basic income.

POINT OF CONTROVERSY

A FLOOR ON WORKING HOURS?

Various instruments are available to halt the growth in wage inequality, such as a wages policy grounded in solidarity, disproportionately high wage increases in collective bargaining agreements, a rollback of precarious employment and changes to wage scales. In addition, a *floor on working time* could also help to improve the situation. This is not an idea that has been simply plucked out of the air. France introduced it in 2014; since then, a minimum working time of 24 hours per week, 104 hours per month and 1,102 hours per year has applied to all new part-time employment contracts. In Germany, the collective agreements covering the metalworking and electrical engineering industry set lower limits for weekly working times; as early as 2003, members of the collective bargaining committee at the ver.di trade union had demanded a minimum daily working time of four consecutive hours and a minimum weekly working time of 20 hours.

The lower limit could be set at 20 *hours*. This would mean that most of the working time models typically used to strike a balance between paid work and (unpaid) care work would already comply with the lower limit. In order to insure that the instrument offers both sides sufficient flexibility, exceptions should apply to pensioners and students and to companies citing 'objective reasons'. It was also discussed whether employees should be able to request a relaxation of the lower limit.

The question of the effect that this lower limit might have on domestic services was vigorously debated. It was argued that the introduction of a lower limit would prevent households from recruiting household help, usually employed for less than 20 hours per week in the same household. In response, it was argued that the lower lim-

it could be relaxed at the employees' request and that it was in any case desirable for domestic workers to be employed by service centres in standard employment relationships rather than being employed directly by one or more private households. Thus the establishment by local authorities of (possibly platform-based) domestic service agencies could be a measure taken in support of the introduction of a working time floor.

REVALUE SOCIAL SERVICES

According to forecasts, social services will be the largest growth sector in the years to come. Firstly, the high birth-rate cohorts, the so-called 'baby boomers', are heading towards retirement age, which will *increase the demand for care workers*. Secondly, working parents need care for their children. These occupations (early childhood education and care, health and care of the elderly) already have a labour market share of 18 per cent. Forecasters are working on the assumption that this share will rise to up to one third of all employees. The share of women in this sector is very high: in 2015, they accounted for 80 per cent of all employees in early childhood education and care, 81 per cent in nursing, emergency rescue services and midwifery and 85 per cent in care of the elderly (STATISTISCHES BUNDESAMT 2017C).

Not all social services are undervalued; however, all those that used to be provided by women without pay are indeed held cheap (SACHVERSTÄNDIGENKOMMISSION 2017; ALLMENDINGER/WOWEREIT 2015). Since the world of work stands to gain from better education, good healthcare, an efficient bureaucracy and good arrangements for the reconciliation of paid work and family life, investment in and development of social services contributes to *increased growth, increased employment, higher productivity and greater prosperity*.

In recent years there have been several attempts by both policy makers and academics to challenge unidimensional indicators of economic development such as the gross domestic product (GDP). Vari-

ous commissions and other initiatives have grappled with alternative approaches, including, among others, the Stiglitz-Sen-Fitoussi Commission working on behalf of the French government, the German Parliament's study commission on 'Growth, Prosperity and Quality of Life', the New 'Magic Square' for Inclusive and Sustainable Economic Growth (DULLIEN/VAN TREECK 2012) and the 'National Welfare Index' (DIEFENBACHER et al. 2016).

Underlying all these approaches is the notion that, in order to determine a society's level of prosperity and quality of life, *a more comprehensive means of evaluation and measurement* is needed than that provided by economic policy makers' current preoccupation with GDP. Environmental and social costs and achievements are not adequately accounted for by a country's GDP. Thus environmental costs, social inequality, gender equality and increases in quality of life resulting from unpaid work are not captured by this indicator.

The proposals put forward by the Stiglitz-Sen-Fitoussi Commission, which also take account of the effects on prosperity and distribution of wealth of socially necessary services, are particularly far-reaching. In their list of recommendations, the authors argue that income and consumption rather than production should be used as the basis for measuring prosperity and economic performance. This would take better account of the *distribution aspects*. What is more, quality of life cannot be assessed solely in terms of the material standard of living but has to take account of health, education, environmental conditions, the extent of private and social activity and the opportunities for effective political action (STIGLITZ et al. 2010a, 2010b).

→ FOOD FOR THOUGHT

RETHINK PRODUCTIVITY

Wage increases are justified in economic theory by the combination of productivity gains, inflation and a redistributive component, even though the last factor has declined in importance in recent years. However, productivity cannot be linked solely to quantitative growth and social services cannot be subjected solely to efficiency criteria without their quality suffering. Thus early childhood educators should not be looking after as many children as possible. The same applies to care work (the catch phrase here being ‘care against the clock’). Public services – and particularly social services – *contribute directly to social welfare and quality of life*. Education, childcare and care of the elderly and others in need form the basis for participation in the labour market and raising tomorrow’s workforce.

For social services, therefore, productivity as hitherto conceived is not a good benchmark. What is needed are *measurement criteria* and *indicators* that are *better suited to the particular character* of social services and represent their value to society and the economy more realistically. A new *concept of productivity* would help to bring the goal of making the public finances sustainable into line with the goals of economic, environmental and social sustainability.

If this new concept is to have consequences and to be of use to labour market policy actors as a basis for advancing their arguments, it is recommended that it be incorporated into the state reporting system. For that to happen, a new reference system for capturing the development of prosperity would first have to be introduced alongside GDP. It might, for example, take the form of a new annual prosperity report or a new ‘magic square’. The contribution of social services could also be made explicit in this reference system.

→ FOOD FOR THOUGHT THE STATE AND THE SOCIAL PARTNERS AS ACTORS IN ENHANCING THE STATUS OF PROFESSIONAL CARE WORK

Since care services are of fundamental importance to society, any attempt to raise their value is a task that concerns the whole of society and must take into account the distinctive characteristics of such services and address the interests and demands for recognition of employees, patients and clients alike. This revaluation will not be achieved simply through society's willingness to pay more. It also requires a broad-based understanding that the provision of such services is one of the *obligations* of a functioning state, which must lay the foundations for such provision through its taxation policy.

There are several starting points:

- Across countries, *coverage by collective bargaining agreement* has proved itself to be the key to securing higher incomes in the social services sector. As a result of the fragmentation of the collective bargaining system in this sector in Germany and, above all, of the increase in the number of private providers (most of whom do not adhere to collective agreements), the link with the general evolution of pay has been lost. Consequently, declaring collective agreements generally binding could protect standards across all providers in the sector (i.e. for public, church and private providers in the care sector) and prevent wage competition.
- The revaluing of social services begins with the *training conditions*. The fact that people with specialist qualifications are employed in the social services is still all too readily suppressed. To reward those qualifications financially in an adequate manner is important for service workers' professional self-image. An initial step would be to put trainees on an equal footing with those in the dual system and thus to pay the *trainees' rates* across the sector.
- At the same time, the low incomes remain a problem. Even full-time child care workers and nurses earn between 500 and 1,200 euros less than skilled workers employed in vehicle and vehicle component manufacture. The Nordic countries could serve as a model here. A *solidarity wage policy* aims, among other things, for wage drift adjust-

ment clauses in order to even out industry-specific differences. In Sweden, this wages policy led to women's earnings increasing at twice the rate of men's over a five-year period.

— *Working times* should also be looked at critically. In Germany, workers in social occupations are frequently work short hours only. However, some of them would like to *top up their working times*. In the Commission's view, more opportunities should be created for increasing working times on an individual basis. At the same time, the fact that many employees do not wish to work full-time is often due to the particular pressures of the job: shift work, high work intensity and cutbacks in interactions ('care against the clock') often militate against motivation and professional standards.

— *Workforce allocation* also has a bearing on this. The insufficient increase in jobs due to restrictive cost targets has led to massively increased work loads in health and social services. An overburdened and worn-out workforce is the consequence. Binding standards for staffing levels and compulsory and enforceable health and safety standards are therefore recommended.

— Many initiatives on the future of work have focused on manufacturing industry until now. It would be desirable for such initiatives to be targeted at public and social services as well.

→ FOOD FOR THOUGHT MAKE WORKPLACE ASSESSMENTS MORE GENDER-EQUITABLE

If the particular importance, function and quality of typical 'female occupations' are to be recognised, then *criteria for workplace assessment* will have to be reviewed. In comparison with other occupations, significant activities that are characteristic aspects of these occupational groups are not (sufficiently) taken into account in workplace assessments and hence are ignored when it comes to wage setting. Heavy carrying and lifting in nursing and care work, emotional and psychosocial demands as well as social skills are not generally given appropriate consideration in the evaluation procedures currently in use. Employers and the social partners should therefore overhaul their job evaluation instruments and include these criteria in their evaluations, thereby establishing a basis for negotiating *non-discriminatory wages* that do justice to the particular demands of these activities.

Food for thought on this question is also provided by the Institute for Work, Skills and Training (IAQ) at the University of Duisburg-Essen, where a 'Comparable Worth Index' has been calculated that identifies activities of equivalent value on the basis of job descriptions. Using the so-called eg-check procedure developed by Tondorf and Jochmann-Döll, which is based on the analytical workplace assessment method, all occupations are re-evaluated and given a point score. This makes it possible to compare different jobs more fairly (and hence also in a more gender-equitable way). The results can serve as an instrument for companies seeking to avoid wage discrimination. The human resources department at Messe Berlin, a leading trade fair company, has put this procedure into practice. Since the possibility that collective agreements also discriminate against women cannot be excluded, the German Food, Beverages and Catering Union (Gewerkschaft Nahrung-Genuss-Gaststätten) is reviewing all collective agreements.

INCOMES IN THE KNOWLEDGE AND DATA ECONOMY

In the digital economy, people are constantly generating data. This applies to work processes as much as to their private lives. This raises questions about the protection of personal data. There are now numerous initiatives in this area, such as a citizens' initiative in Germany that has developed a proposal for an EU digital rights charter, one of the rights being the ability to determine how one's data is used. On the other hand, another question that is constantly being raised concerns involvement in the exploitation of data. When individuals generate data or content through their creativity, communications or movement profiles from which profits can be made, then the ownership of the data or content is at stake. What (still) belongs to me? What happens to my data or content if it continues to be used by others?

→ FOOD FOR THOUGHT GUARANTEE

OWNERSHIP OF DATA

Data are said to be the raw material of the future. Management consultants Boston Consulting call the underlying principle 'big data as a business'. The exploitation and sale of user data already form the basis of a lucrative business model for platform operators. So far, the data has been made available at no cost by customers – in some cases without them actually being aware they are doing so.

If the exploitation of data is to play an ever greater role in value creation, then the question arises of who the data belongs to and how it might be possible to give 'data donors' a share of the profits made with their data. The German *legal system* recognises *ownership of things* but not of *personal data*. The Commission proposes that consideration should be given to reform of both the right of ownership in the German Civil Code and to the general terms and conditions of business on platforms. Such a reform is already being debated by lawyers.

The creative and cultural industry, with a turnover of some 146 billion euros, is one of the strongest growth sectors of the German economy. Its share in the country's total economic output (gross value added) is 2.3 per cent (BMWI 2017).

The chief characteristic of work in this sector of the economy is that *creative output* is developed, disseminated and processed. This include works, products and services from the worlds of music, drama and art, as well as content and goods produced by the publishing industry, the film, TV and radio industry, journalists, advertising and design agencies, architectural practices and software developers. The common core of all work in the sector is the *act of creation*, from which arises an *original work that can be protected by copyright*.

The idea of copyright law is that artists should be entitled to an *appropriate share of their work's economic success*. Whether the law is fit for purpose in the digital age is currently in doubt. People produce work that can be used and exploited digitally, many earn their living this way. The software industry and the gaming sector in particular seem to require new legal regulations. In the case of platforms, there is a need to clarify whether and to what extent they should have to comply with the principles of copyright in their use of data and content. If the boundary between producers and consumers of media becomes blurred (researchers speak of *prosumers*) then user-generated content is produced from which the platforms earn money.

Many creative workers have to surrender their rights of use entirely and frequently in exchange for a lump-sum payment (KRETSCHMER 2016). This structural imbalance between users and creative workers has become evident in the increase in buy-outs, in which artists are paid a lump sum by the rights holders for the unrestricted use of their work. The consequence is a winner-take-all market. In the music industry, almost 90 per cent of all revenue is taken by 10 per cent of the market participants; in the world of writing and visual arts, the share is about 50 to 65 per cent (KRETSCHMER 2011).

POINT OF CONTROVERSY STRENGTHEN CREATIVE WORKERS' COLLECTIVE RIGHTS

Creators should be entitled to an appropriate share of their works' economic success. Relevant aspects:

In reforming copyright law, the key to improving the situation of creative workers lies in *copyright contract law*. Individual creators tend to be outgunned in contractual negotiations. Thus the starting position for individuals engaging in negotiations should be strengthened in copyright contract law. Furthermore, creative workers' associations and trade unions should be enabled to negotiate and defend their members' remuneration. This also applies to the strengthening of revocation rights, which enable creators to make new use of unused works or to push for their reuse.

One aspect that is becoming increasingly important in the digital economy is the blurring of the boundary between producers and consumers and the emergence of the 'prosumer' as a new type of user who is both producer and consumer. The spectrum ranges from blog or encyclopaedia contributions via Facebook postings to the uploading of films to YouTube. The platforms earn money from the content generated free of charge by users by placing advertisements on the pages in question. This raises the question of how to enable users to share in the economic success of the content they have generated. This debate is still in its infancy, but is becoming increasingly important.

In order to gain social acceptance for collective remunerations, the principles of rate setting and the distribution of royalties must be disclosed. Conflicts of interest between users (such as publishing houses) and creative workers in copyright collection societies should be addressed in a straight-forward manner. The collection societies should assert themselves more strongly in their role as representatives of the collective interests of creative workers, who facilitate and support both cultural and commercial innovation.

IMPROVE THE STARTING CONDITIONS FOR YOUNG ADULTS

A good *infrastructure* is regarded as the best guarantee of equal opportunities. If all children are granted adequate material and emotional care and timely support in early childhood, a solid foundation will be laid for their futures (→ EDUCATION AND TRAINING). The same applies to the education system, which is supposed to provide a good education for all children regardless of where they live and their social background. There is considerable need for improvement in this respect, for which major investments are urgently required.

However, the current situation looks rather different. The conditions under which children start their lives vary considerably. The expected transfers of wealth through inheritances (see p. 50) will further exacerbate social inequality. Various initiatives have been launched in an attempt to rectify this inequality in starting positions by creating a more level playing field. Thus the ‘personal development account’ offered as part of a preventive employment insurance scheme (SCHMID 2008) and the ‘life chances loan’ (a sort of credit account intended to be used for education, to provide more individual flexibility and control over working time and to even out social risks; MAU 2015a) are based on the same notion, namely that the country should invest in young people’s material starting conditions in order to even out, at least to some small extent, unequal chances in life and opportunities for growth.

POINT OF CONTROVERSY A CREDIT ACCOUNT FOR THE ENTRY INTO ADULT LIFE?

Should massive improvements to the education infrastructure fail to transpire, young adults could be given a *start fund*. This idea goes back to the British economist Tony Atkinson, who proposed that a capital endowment should be paid to all citizens at adulthood, to be funded by an increase in inheritance tax (cf. ATKINSON 2016).

Supporters point out that an instrument of this kind would mitigate the social inequality that is reproduced and exacerbated by the uneven distribution of wealth. A reform of inheritance tax is overdue in any case, they argue, and the goal is a sensible one: the start fund could motivate people to do something for themselves, to risk a new start, to go down a new path – all ventures that in a dynamic environment not only help individuals and open up opportunities but could also lead to innovations in the social sphere or the economy.

Sceptics see many unanswered questions. It has to be explained, they argue, whether and why the children of wealthy parents should be indulged with a capital endowment. There are also differences in individuals' ability to use the money strategically. More generally, they see a need for clarification as to whether the payment is to be linked to conditions and, if so, what they might be. At the same time, such a start fund could impede the development of education infrastructure, particularly if finance for the fund is made available without any reform of the inheritance tax. There are also concerns that a fund of this kind does not make sense until middle age if it is meant as a substitute for inheritance.

ACCESS TO THE FRUITS OF PROGRESS

Technological progress and the new business models associated with it open up potential for *increased value creation and a rise in productivity*. How are workers to acquire a share in this progress and the associated profits? Wage rises agreed through collective bargaining are the standard instrument. However, there were lively debates within the Commission about the extent to which additional instruments were required that would *institutionalise a share for workers* and secure it for the long term, obviating the need for repeated negotiations.

POINT OF CONTROVERSY AN EQUITY STAKE?

Supporters see workers' shareholdings as one way of giving employees a stake in their company's profits in addition to any wage negotiations. In this way, employees could have a stake in the growth of the factor of production that is capital, which would in turn have positive effects on the fairness of the distribution of wealth in society as a whole.

A further aspect of workers' shareholdings was much discussed within the trade unions, especially during the financial and economic crisis between 2008 and 2010. There were voices advocating employee shareholding in cases of corporate restructuring and crisis that are being assessed and co-managed by the parties to collective bargaining. If it is unavoidable that employees have to make financial concessions in order to safeguard their jobs, an equity stake could, depending on how it is structured, provide (partial) compensation for the temporary loss of purchasing power (the same argument was made in a position paper drafted by the European Economic and Social Committee EESC).

Employee shareholders have a particular interest in their companies' long-term success. If the workforce were to aggregate their individual shareholdings, they could bring their influence to bear. In this way, their interest in their companies' long-term survival would be more likely to prevail over corporate short-termism. One possible

approach would be to set up an employee shareholders' association that could amalgamate individual voting rights into a single, more powerful block. A current example is the new employee shareholders' association 'Wir für Siemens' ('United for Siemens'). And not least, promoting employee shareholder schemes could be an appropriate means of encouraging the acquisition of personal assets and/or provide an additional incentive to make private provision for old age.

Critics observed that profit sharing is not a suitable instrument for enabling employees in all industries to acquire a share of the fruits of progress. The entire public sector would be excluded, as would all those workers who are not employed in a company. Furthermore, companies in the digital economy frequently record high gains in the period immediately after being listed on the stock exchange that are based largely on anticipations of future profits but are not always sustainable. The bursting of the dot.com bubble showed, the dissenting voices argue, that very many companies quickly disappeared from the market despite having recorded massive gains only a short time before. Digital platforms could also go through a similar process of consolidation which, even if it was not to take so dramatic a course, could still lead to huge losses of income.

At the same time, there is the question of *knowledge and expertise*. Very savvy employees could sell their shares in a boom. All studies pertaining to Germany indicate, however, that private households have little expertise in dealing with financial products. What is lacking is any real understanding of corporate performance. In the event of insolvency, employees would suffer a 'double whammy': not only would they lose their jobs but the value of their shares would also plummet. Above and beyond questions about employees' financial expertise, there are objections in principle to employees bearing some of the *entrepreneurial risk* as a result of their membership of profit-sharing schemes in addition to the risk of job loss to which they are already exposed. A further macro-economic risk to profit sharing is that this could have a procyclical effect if employees' earnings rise sharply as profits increase in an upturn and fall equally sharply in a downturn, leading to similarly sharp fluctuations in consumer spending. For this reason as well, there is much to be said, according to the critics, for promoting employee shareholding only as supplement to regular wages.

Should employee shareholding become a model for the future, it would have to be decided whether former employees would be allowed to retain their shares (even if they were unemployed).

In recent years, the financial crisis and economic uncertainties have revived ideas of alternative forms of economic activity. The umbrella term 'solidarity economy' encompasses a broad variety of initiatives and plans, such as village shops run by villagers, collective enterprises and bartering groups, as well as social-reformist consumer, energy and producers' cooperatives. Common to all these approaches is the *sharing principle*. For a long time now, the Internet has been opening up both commercial and non-commercial opportunities, such as non-profit food or clothing swap schemes or commercial exchange services such as car sharing schemes.

In the wake of the debate on the sharing economy, *cooperatives* have been making a comeback. The United Nations declared 2012 the International Year of Cooperatives. The cooperative philosophy has a long history: originating in England, it spread throughout Germany in the 19th century (SCHWETTMANN 2012). Today, there are some 5,600 cooperatives of various kinds in Germany (DGRV 2017b). There are many house-building cooperatives; the Raiffeisen cooperatives supply farms with equipment, animal feed and fertilisers as well as machinery. New cooperatives are currently being set up in the renewable energy industry in particular (DGRV 2017a). Most cooperatives are consumer or housing cooperatives. Worker cooperatives or producers' cooperatives, in which members themselves also work, are less common (SOMMER 2012).

→ FOOD FOR THOUGHT PROMOTING COOPERATIVES IN THE DIGITAL AGE

Cooperatives are based on the dual notion of *sharing and owning*. Unlike conventional companies, they are *committed to their members* rather than to profit making. Members have a share in the enterprise, although some may have a greater share than others, but they all have the same voting rights. Since members are, on the one hand, owners or employers and, on the other, users or employees, two conflicting roles in the market come together in the groups of individuals running cooperatives. Applied to the digital economy, this means that the *sharing* does by no means have to exclude *owning*. In other words, business models based on the idea of sharing (such as Airbnb or Uber) could also be organised on the basis of *collective ownership*.

By way of example, proposals have been formulated for alternative, *cooperatively-operated platforms* ('platform cooperativism') that would be non-profit-making and offer good working conditions (SCHOLZ 2016a, 2016b). Both Uber and other crowd work platforms such as Upload could conceivably be operated as cooperatives, since the technical basis is the same. Uber drivers or crowd workers would then be the platform operators.

In many countries, *trade unions and cooperatives are closely linked*. In Germany, there has apparently been some degree of reluctance to forge such links, not least probably because of a number of scandals in the 1980s. Recently, however, there have been the first signs of a rapprochement. After all, solidarity and democracy are deeply rooted as guiding principles in both organisations. Enterprises setting up as or converting themselves into cooperatives and digital platforms operated as cooperatives open up a new sphere of influence for trade unions.

EDUCATION AND TRAINING

GERMANY, THE TALENT FACTORY



**AWAKEN CURIOSITY,
UNLOCK POTENTIAL**



WHERE DO WE STAND?

Despite global competition, the label ‘Made in Germany’ is still an indication of the special quality of the goods and services produced there. Germany’s economic success is based not on raw materials but on *the skills and expertise of its people*. Ideas and innovation emerge out of the exchange of experiences and the interplay of skills. They provide the basis for Germany’s economic model, for job security and for job creation. It does remain to be seen whether the high share of skilled work as a quality feature of the German economy can be sustained at a time when information is exchanged and processed globally and rationalisation and standardisation processes are encroaching even on highly skilled occupations. However, it is becoming increasingly clear that future productivity models will depend to an ever greater extent on innovative ideas that workers develop as they implement and interact with new technologies.

EDUCATION BECOMES EVEN MORE IMPORTANT. In times of structural upheaval, education is the necessary answer. They lay the foundations that enable citizens to *lead mature lives, exercise powers of judgement, understand complex interactions and live as active citizens in a democratic society* – and ideally they prepare people to enter their chosen occupations and to progress and make transitions over the course of their working lives. The labour market acquires flexibility as a result. The type and extent of targeted training play an important role in maintaining *economic competitiveness*; training is vital, not only to secure individuals’ livelihood but also to facilitate their self-realisation and participation in society and to guarantee them a high degree of satisfaction in both their work and their lives outside work.

People learn throughout their lives. The more dynamic the changes in their living environment are, the more necessary learning becomes in order to create opportunities for *self-realisation and participation*. The education and training system supports these learning processes,

but also aims to impart the actual competences and *skills* that are in demand in the labour market. Qualifications and the associated certificates document progress in learning and perform a signalling function when vacancies are being filled.

In 2016, for the first time, there were more young people in the dual vocational training system that held the upper secondary school certificate (Abitur) than those with the lower secondary school leaving certificate (Hauptschulabschluss). At the same time, many young people leave school without any qualifications at all. In 2014, this was true of 47,000 youngsters (CARITAS 2016), which equates to a share of almost 6 per cent. The share is even higher when it comes to vocational qualifications. A total of 1.2 million young people aged between 20 and 29 have no vocational qualification – almost 13 per cent of this age group (BIBB 2016; IW KÖLN 2014).

THE EDUCATION SYSTEM IS UNFAIR. For all the credit that is due to the education system for its achievements, it has been criticised repeatedly for its *selectiveness*. In early-years learning and in schools, social inequalities are reproduced and sometimes even exacerbated because children from educationally disadvantaged or immigrant backgrounds are not adequately supported or experience stigmatisation.¹

EVEN THE DUAL SYSTEM IS SELECTIVE. The dual vocational training system strengthens companies' innovative capacities and forges close links between the education and training system and the labour market, ensuring a successful transition from training into the labour market. For this reason it is valued internationally as an instrument for preventing youth unemployment. However, there are problems as well. It is true that there are no formal barriers to entry into the dual system, but access for young people without a school certificate or with only a lower secondary school certificate is difficult. In the national apprenticeship exchange organised by the Chambers of Industry and Commerce, two out of three training offers are closed to young people with lower secondary school certificates. The so-called 'transition system', in which around 270,000 young people found themselves in 2016, is also problematic. This transition system offers initial training to young people who fail to enter regular training immediately after leaving school. However, no vocational qualifications can

1 On average, children from socially disadvantaged backgrounds in Germany have a lower skill level than children from more favoured backgrounds (OECD 2016c).

be obtained and there is a risk of it becoming a long-term 'parking facility' for young people without a training position (BMBF 2016).

A noticeably large number of the training programmes in the health and social services sector, which are chosen particularly by women, have to be funded privately. Moreover, participants in these programmes have the status of 'pupil', which stands in sharp contrast to that of 'trainee' in the dual system.

THE EDUCATION SYSTEM AS A WHOLE IS UNDERFUNDED. In general terms, expenditure on education in Germany is below average. It amounts to only 4.2 per cent of GDP; the average for OECD countries is 4.8 per cent. Investment in tertiary education (which in the OECD statistics also includes further and continuing education) is particularly low in Germany (OECD 2016a). This is in stark contrast to the resolutions adopted at the 2008 Dresden education summit. On that occasion, the federal government and the states (Länder) had agreed to raise expenditure on education and research to at least 10 per cent of GDP by 2015 – 7 per cent for education and 3 per cent for research.

CONTINUING TRAINING IS NECESSARY BUT ALSO UNDERFUNDED. It is now almost a platitude that people should continue to receive training throughout their working lives. The impetus for this emanates from the labour market, where there is a strong demand for workers whose competences are in step with the times. Besides individual continuing training, e.g. in order to make up for a lack of qualifications or to enhance promotion prospects, *employer-provided continuing training* is of particular significance. While individual continuing training mostly takes place on workers' own time and is self-funded, employer-provided continuing training (paid for by the company and on company time) is training from which the company itself benefits more directly. An analysis of initial and continuing vocational training in Germany (ROGGENKAMP 2016) shows that continuing training is predominantly privately funded.

TREND REVERSAL IN EMPLOYER-PROVIDED CONTINUING TRAINING?

While public expenditure on continuing training has fallen, company investment has begun to rise again after several years of stagnation. In 2014, 37 per cent of the population 25 to 64 years old took part in employer-provided continuing training, although this figure also includes 'minor' training events, short adaptation courses and the statutory health and safety programmes (AUTORENGRUPPE BILDUNGS-

BERICHTERSTATTUNG 2016). The average number of hours' continuing training undertaken is 36 (26 hours for employer-provided and 75 hours for individual occupational training measures) (BMBF 2015), which is far removed from most programmes leading to a formal qualification, so that this employer-provided training offers little assistance to those seeking to advance their careers.

BARRIERS TO EMPLOYER-PROVIDED CONTINUING TRAINING. Continuing training has so far taken place mainly where it is already an integral part of the relevant job profiles. Targeted 'nudging' to take part in continuing training is usually seen where the company also has a concrete training need. The most important reason companies give for their reluctance to support continuing training, in addition to the financial aspects, is that *staffing levels are too tight*. Costs are incurred, they argue, from which no immediate benefit is derived; such training is simply not cost-effective, particularly when staff turnover is high (BITKOM RESEARCH 2016). There is a high return on continuing training for employees and employers in those companies that are pursuing a strategic plan and where there is regular dialogue between human resource departments and works councils.

WHAT IS THE RIGHT KIND OF CONTINUING TRAINING? The situation in the continuing training market is proving to be a constraint as well. There is frequently a lack of standards and systematic regulations – and in view of the rising demand, provision in many areas will be inadequate or come with sharply rising prices. A lack of transparency, inadequate advice and a lack of clarity regarding funding all impede access to training, particularly for people on low incomes and without a vocational training qualification.

There are also organisational obstacles to continuing training. Individuals who are heavily involved in their jobs often have no time during their working hours and have to schedule their training during their time off. Anyone doing care work on a permanent basis has very little leeway in their free time. Consequently, leave of absence is an important precondition for increasing the level of training activity.

REPRODUCTION OF INEQUALITY? According to the Institute for Employment Research (IBA), the more highly qualified a person is, the more likely they are to take advantage of training opportunities. Women and people with a migrant background are much less likely to participate in continuing training, particularly in employed-pro-

vided continuing training, because they are frequently employed in low-skill, part-time or precarious jobs. So far, the instruments used to promote employer-provided continuing training have had no impact at all on this social imbalance. In the higher segment of the education and training system, funding arrangements as provided under the terms of the German Federal Training Assistance Act (BAföG) are available for those who are already well qualified and are undertaking individual further vocational training, such as studying for the master craftsman's diploma or a university degree. Many poorly qualified workers, on the other hand, are dependent on the continuing training schemes within the Hartz IV system. It is true that the *unemployed* are offered further training; however, the incentives to accept such offers are weak, since the measures provided are scarcely any improvement over the available welfare benefits. Under the terms of the Act on the Strengthening of Continuing Training, training has recently been given priority over job placement for recipients of unemployment benefits. Nevertheless, job centres frequently lack the money to fund the demand for further training (DIETZ/OSIANDER 2014).

There is increasing support among researchers on education and training for more *incentives* or even obligations to invest in and provide continuing training. Legal scholars (e.g. KOCHER/WELTI 2013) recommend that there should be a *legal entitlement* to continuing training and that everybody should have a *regular interview* to discuss their options for continuing training.²

² In the draft of the 'Work 4.0' white paper published by the Federal Ministry for Employment and Social Affairs (BMAS 2016), such a legal entitlement is already a declared objective.

WHAT SHOULD WE BE PREPARING FOR?

In a dynamic and globally networked economy, *employment projections* are a tricky business – and to be treated with caution. However, it seems likely that, even as digitalisation progresses, individuals with a vocational qualification will still be able to rely on demand for their labour. However, it is equally likely that demand for people without such qualifications or who already today are employed in so-called ‘simple’ jobs will decline. It is estimated that, by 2025, there will be 1.3 million more people seeking such jobs than there are jobs to be had. According to forecasts, ‘simple’ jobs will remain only where automation does not pay off or where consumers demand to have a human being as their contact.

It is also expected that in certain occupations digitalisation will lead to a devaluation of skills as work becomes increasingly detached from the notion of the occupation (and the assignment of those jobs to the relevant collective bargaining agreement will begin to falter). On the other hand, digitalisation may also lead to upgrading certain tasks within a given occupation, which would then need to be reflected in the relevant collective agreements. Whether to retain the occupation principle as a reference framework or whether to develop it further in the light of new types of work is a question that still has to be addressed.

VOCATIONAL TRAINING UNDER PRESSURE TO CHANGE. The state, business associations and trade unions play a role in planning the restructuring of training occupations in accordance with the requirements of the world of work. Many training regulations are not geared towards a specific technology, so that new technologies can be successfully incorporated into the practical training provided by companies. Furthermore, training programmes are designed to be process and competence-oriented. However, forms of *interdisciplinary collaboration* and *agile working* (e.g. design thinking methods, systems engineer-

ing) have to be incorporated into the early phases of the training so that networked working in complex contexts can be experienced.

3 STEM is the umbrella term for occupations involving science, technology, engineering and mathematics. The share of women in the field is, at 15 per cent, still below average (BA 2016b).

The share of women in the so-called STEM occupations³, which are regarded as future-proof and relatively well paid, is still too low. Moreover, their oft-mentioned 'training lead' frequently dissipates over the course of their lives because they have little access to continuing training and upskilling opportunities once they go into part-time work. It

is precisely in those occupational profiles that have no further development pathways built in that the provision of advanced training programmes for professional development and the acquisition of additional qualifications is of particular importance.

The question of a growing *shortage of skilled workers* and unfilled vacancies is widely debated in Germany (ZIKA/MAIER 2015; MAIER et al. 2016). The contributory factors are demographic change and the expansion of university education on the one hand, and the large number of young people who do not manage to make the leap from school into training on the other. Thus companies seeking to recruit new blood find themselves faced with the challenge of once again giving greater consideration to youngsters with just lower secondary school qualifications. The Federal Employment Agency has provided some important support by expanding the range of training support measures for the dual system and by introducing the assisted training scheme.

CHANGE IS BECOMING THE NORM. When occupations disappear or change, employees are forced to reskill or retrain. Current programmes promoting continuing training will have to be redesigned for this purpose. The way must be smoothed in order to keep friction costs low and to give particular support to individual initiative.

Everyone is talking about a 'training offensive', but it is also necessary to clarify whether, firstly, the personnel required for this are available and, secondly, whether they are themselves 'digitally qualified' to a sufficient level. There is already a shortage of vocational training school teachers and work loads in the schools have already reached the limit. Thus the recruitment and continuing training of teaching staff will play a key role in shaping digital change.

NEW ISSUES FOR EDUCATION AND TRAINING. The digital age demands precisely those skills – the capacity for interdisciplinary collaboration and the ability to network in complex systems and to interpret data – that are an integral part of the broad concept of education and training for which Germany is well known. Strengthen information and communication skills, introduce new school subjects such as digital studies – such calls usually meet quickly with agreement. However, one response to the transformation is missing here. An *early warning system* is required that identifies future skill requirements but is also capable of looking beyond the skills that are of direct benefit to the economy.

WHERE CAN WE BEGIN?

In times of structural change, new areas of employment emerge while others disappear. Switching focus to new areas of activity and changes in job content and processes requires individuals to be flexible in both their professional self-image and their actual day-to-day work. The education system must ascertain whether its own objectives and offers measure up to the new working and living conditions; at the same time, it must lay the foundations for an enlightened society.

A NEW AGREEMENT ON THE GOALS OF EDUCATION AND TRAINING

It is now a commonplace that new technologies should be used in schools to enable children and young people to appropriate and evaluate them independently at an early stage of their lives. High-speed Internet connections, new school subjects such as digital studies, confident handling of their own data – these are the current demands, some of which have already been met in other countries.

Nevertheless, it is worth pausing for a moment. Which educational objectives are still significant even in a period of structural change? What new objectives must be added? It is no small task for the education system to turn all children into mature individuals able to find their way in a democratic society and to contribute actively to shaping it. But it must also ensure that all young people possess or are enabled to acquire the skills they require in order to be able to participate. In this respect, some catching up is needed.

→ FOOD FOR THOUGHT EQUAL OPPORTUNITIES IN THE DIGITAL AGE

The demand for more education and for lifelong education and training is all-pervasive in the current debate on digitalisation. And yet all invocations of the importance of education in the digitalised world of work will ring hollow if we do not succeed in overcoming one of the fundamental shortcomings of the German education system, namely its *social selectivity*, which is often described as scandalous but has not been remedied yet, despite all efforts. In comparison with other countries, the socioeconomic background of children in Germany has a much greater effect on their success at school. Consequently – and bearing immigration in mind as well – many young people’s potential goes untapped. This social selectivity will become even more problematic if, as forecast, the labour market situation for people without qualifications deteriorates significantly in the coming years.

The education system must be *appropriately resourced* in terms not only of buildings and equipment but also of teaching staff. It must reach children earlier, for example through an expansion of early-years education. It must turn schools into *the* places of learning alongside the family, for example by expanding the provision of ‘genuine’ all-day schools. And even if the division of the education system into different types of secondary school is retained, very much the exception internationally, the permeability between the various sections must be strengthened.

Technological change is not only producing new forms of work but also leading to new forms of communication, self-representation and recording of personal data. Even ‘digital natives’ have to be prepared for these demands. An understanding of how algorithms work, of the mechanisms of Web 2.0 and of how to protect personal rights is becoming essential. However, this in no way makes ‘analogue’ skills obsolete. In a period of change, it is precisely those skills which have been part of the ‘hidden curriculum’ that gain renewed significance. They include the ability *to organise oneself, to study independently* and

to be *self-reliant in one's work*, along with *curiosity* and *self-motivation*. Most important of all is the ability to *cooperate* and *communicate*. Learning in the workplace, and in particular learning a trade, lays the foundation for this, because it teaches people to operate across an entire area of responsibility and thereby strengthens their self-confidence at work.

Digital change and the foreseeable changes in the labour market require not only a *thorough, broad-based grounding in one's occupation*. Workers will also need to be *flexible and adaptable* with regard to job content. To remain in the trade or profession one learnt as a youngster for the rest of one's working life may continue to be many workers' preference; however, it is a desire that for many people will simply not be realised. Thus a willingness to *embrace challenges and change* and to acquire *skills unrelated to one's initial training* will become increasingly important.

How can these objectives be implemented and realized within the education system?

POINT OF CONTROVERSY

IMPERATIVE TO COOPERATE ON EDUCATION

In the German system of separate areas of jurisdiction for the federal and the state (Länder) level, education has always been the prerogative of the Länder. As many other responsibilities have moved to the federal level, education is one jurisdiction that many Länder have been anxious to guard. However proven the decentralised structure of the German education system may be in many respects, at a time of structural change it may also become a constraint if the question of which objectives might sensibly be adopted has to be debated anew in each of the 16 Länder. Many of the Länder are setting up committees and consultative groups in order to debate the challenges and possible solutions. The consequence is a simultaneous but unconnected set of deliberations on the same issues.

Thus, in order to develop a unified *education strategy*, greater opportunities for cooperation between the federal government and the Länder should be incorporated into Germany's constitution. There

was a debate about whether that would be possible within the existing federal framework or whether that framework itself must be substantially modified. Supporters of substantial change suggested, for example, that the constitution should be amended in order to enable the federal government and the Länder to work together to *safeguard* the education system (and not simply to assess its performance and develop it further, as is already permitted). In order to embed this strategy in the wider society, a *Commission on Education Reform* should be set up, in which the social partners would also be represented.

The advocates of constitutional change justified their position by arguing that educational federalism in Germany has to be judged by whether not it can contribute to a better education system. A further proposal for reform relates to the constitutional provision governing when the federal state can grant financial aid for particularly important investments by the Länder and municipalities. It can do so in order to prevent any disruption of the economic equilibrium, to even out differences in economic power across the federal territory or to promote economic growth. The Commission discussed the possibility of reforming this article in such a way as to make it possible to make targeted investment in the educational infrastructure of financially weak municipalities. This could make an *effective contribution to the modernisation of the education system*.

There were critics of this in the Commission as well. They pointed to the far-reaching effects such reforms would have on the web of relationships between the federal state and the Länder and to the issues that would arise in the reforms' wake, such as the role the municipalities would have to assume as 'education providers' (up to now, they have not been able to enter into any direct financial relationships with the federal government). It was also feared that the reforms would blur rather than improve the division of responsibilities for education policy, making it difficult to attribute political liability for failures correctly.

However, the unmet need for school building refurbishment alone – which the Kreditanstalt für Wiederaufbau, the German government-owned development bank, puts at 34 billion euros (BRAND et al. 2016) – shows that there is an enormous need for action. It is true that the system has already received a boost from the expansion of all-day schools. However, the afternoon provision in most so-called

'open' all-day schools is of inadequate quality. It would, therefore, be worth considering introducing in the near future a *legal entitlement to 'genuine' all-day schooling*. The expansion of all-day schools should also be linked to the expansion of social work in schools and interdisciplinary teams for day-care centres and schools. For vocational training schools, a *vocational school pact* could improve the technical equipment, similar access across all of Germany and the upskilling of teaching staff. Given the shortage of teaching staff in this sector, this is a step that is overdue.

The fact that the federal government is making available, via the municipal investment support fund, a total of 3.5 billion euros between 2017 and 2020 for the refurbishment of school buildings is very welcome. However, in view of the enormous backlog, further financial assistance in this area will be required in the years to come.

IT knowledge and skills are not all that has to be taken into account in developing a training strategy for the future world of work. As automation and digitalisation advance, systems are becoming more complex – errors in automated systems, for example, cannot be dealt with by employees according to a script. Besides improved IT skills, the ability to *take responsibility* for processes and to *think and take action as a participant in networked and interdepartmental processes* is most important. This is why personal skills must be strengthened. Interdisciplinary collaboration will become increasingly important in many areas. Learning on the job is becoming indispensable because of the shortened half-life of technological innovations. Consequently, work stations will increasingly have to be upgraded to serve as learning locations as well. Digital assistance systems could be an important starting point.

When the labour market and processes in the workplace are changing very dynamically, *matching problems* between employees' existing skills and competences on the one hand and employers' expectations and requirements on the other are foreseeable. What is needed, therefore, is information on which competences will be in demand in the labour market and where and in what degree they will be required.

→ FOOD FOR THOUGHT COMPETENCE MONITORING FOR GERMANY

The Commission supports the plan to introduce competence monitoring and to institutionalise it. The aim of such monitoring could be to identify, on the basis of an extended definition of competence, the key competences that are important for the work of the future and for the competitiveness of German companies. One should focus first on those competences that are growing in importance because of new technologies. The impetus for this could be provided by a project funded by the Federal Ministry for Education and Research that is currently in its pilot phase. The project is developing procedures for identifying and measuring the competences required along the value chain (from basic research to marketing and social acceptance).

This monitoring should be carried out *on a permanent basis* and could usefully be supplemented by the monitoring of skilled personnel that is planned by the federal government.

The Commission is well aware that such monitoring is a complex undertaking and difficult to put into practice. However, such an instrument is indispensable in order to safeguard opportunities to participate in the world of work. Just as companies observe their markets, so employees – like the education system and the social partners – must have opportunities to prepare themselves in good time for new demands.

SUPPORT FROM THE VERY BEGINNING

There is scarcely a forum on digital change that fails to mention *support in early childhood*. Primary-school children are already being given opportunities to familiarise themselves with and make use of new technologies. There are even various initiatives for day-care centres. Truly integrated approaches should aim to give children, regardless of their social background, an opportunity to function autonomously in a complex, digitally networked world.

The age at which children might reasonably be expected to benefit from a given new technology is very much an object of critical debate among educationists. It is widely agreed that curiosity, activity, interactive engagement and a good emotional climate are fundamental preconditions for effective learning processes. They also promote precisely those skills that are important now and will continue to be so in the future. Early-years education is no panacea for the prevention of social inequality, but when combined with other educational instruments and social protection for the family it can help to give children a solid start in life (NAUMANN 2014).

→ FOOD FOR THOUGHT QUALITY

STANDARDS FOR EARLY-YEARS EDUCATION

Early-years care and education establishments make a significant contribution to an inclusive society. Independent activity, freedom to be creative, space for self-development and time for relationships should therefore form part of all approaches to teaching and learning. For such approaches to be implemented, *adequate levels of both teaching staff and equipment* are essential.

Considerable efforts have been made in recent years to expand childcare and all-day schools. However, there is still a lot of catching up to do in western Germany. In the eastern part of the country, the provision of childcare and all-day schools has traditionally been much better. In the communist system, they were vital for allowing both parents to work full time, as was expected in East Germany.

Besides the quantitative expansion, the *quality* of provision must also be a particular focus, particularly in early-years education. *National standards* setting out the general requirements for early-years education are required. These must include staffing ratios, group size, the initial and continuing training of teaching staff and time for preparation and follow-up. These standards must be applied regardless of who the provider is and could be enshrined in an ‘Act on Raising the Quality of Day Care and Early-Years Education Establishments’.

Proposals for approaches to teaching and learning that seek to counteract the various forms of disadvantage can be found in, for example, the ‘*Index for Inclusion*’ (BOOTH et al. 2006). Children and young people should take part in cultural and social activities in their local educational institutions. The basic philosophy is to acknowledge diversity and to act respectfully towards others. The differences between children should be valued as an opportunity for shared playing and learning rather than as a problem. In general, all barriers that impede children’s access and categorise them as ‘special cases’ should be broken down. Children should learn together and from each other.

Many people, from employees to the self-employed to personnel managers and managing directors, feel themselves overburdened by the *complexity and speed of change*. This in turn generates fear of loss and failure, leading to a lack of self-efficacy belief.

→ FOOD FOR THOUGHT

STRENGTHENING MINDFULNESS

Technical skills and familiarity with digital technologies will not be sufficient to enable individuals to deal with the increasing complexity and the accelerating pace of change. And because of dwindling natural resources and growing environmental problems, future generations will also have to grapple more intensively with the question of sustainability. Greater attentiveness towards oneself and others seems to be required.

One source of inspiration for this is the ReSource Project carried out by the Max Planck Institute for Human Cognitive and Brain Sciences in Leipzig. It showed that mindfulness training not only aids effective stress reduction and promotes individual resilience but also enhances *emotional intelligence*. It is hardly surprising that companies are now seizing on such findings, since increased employee adaptability and performance and a reduction in downtime may be precisely the outcome that is desired.

The education system also has a contribution to make. It must find ways in which children can experience self-efficacy and confidence and can also be trained in empathy and intuition, self-awareness and courage, energy and sensitivity.

In discussions of the demands made of the education system, teachers are often criticised for a lack of initiative and aptitude. Such criticisms ignore the fact that good teaching requires certain conditions to be fulfilled.

→ FOOD FOR THOUGHT IMPROVE WORKING CONDITIONS IN THE EDUCATION SECTOR

Working conditions in the education system are the key to the success of education reforms. It is therefore essential that they be improved.

The resources required to meet the high demands placed on educational establishments should be made available. Adequate *staffing levels* are the best protection for teachers who take their jobs seriously against becoming worn-out and exhausted. In the continuing training sector in particular, there is a high level of fixed-term employment and many jobs are linked to projects. The structural destabilisation of career trajectories in this area has brought an element of precarity into the education sector and is undermining efforts to recruit sufficient personnel in this expanding field.

LIFELONG LEARNING IS BECOMING THE NORM

Schools, including early-years provision, lay the foundations for people's working lives. This begins with the question of which options are opened up or closed by different educational pathways. Scarcely one in every two youngsters leaving lower secondary school goes directly from school into training. In the national apprenticeship exchange organised by the Chambers of Industry and Commerce, two out of three training offers are from the outset closed to young people who hold only lower secondary school certificates. A total of 270,000 young people are in one of some 350 programmes provided by the federal government or the Länder as part of the 'transition system'. (AUTORENGRUPPE BILDUNGSBERICHTERSTATTUNG 2016). More than 120,000 young people in each year group fail to obtain a training place (BIBB 2016); most of them are at risk of long-term unemployment or precarious employment. Resentment and conflict are the possible consequences of these *missed opportunities to enter the training system*.

Consequently the aim of offering young people *access to vocational training* is and will remain a priority. Action is urgently needed, particularly in regions with especially problematic training markets. Mandatory *quality assurance and quality development systems* can also help to ensure that the training is successfully completed.

The decision for or against vocational training is a very personal one. It depends on a young person's individual interests, the training conditions and the career and development prospects. In other words, companies themselves have it in their power to keep the dual training system attractive. The figures show that they are largely succeeding in this: for the first time, the share of trainees in the dual system with higher secondary qualifications (28 per cent) is greater than that of trainees with just lower secondary qualifications (27 per cent) (BMBF 2017). This is significant because higher secondary qualifications are the prerequisite for attending university. Traditionally, they were not seen as a pathway to the dual system, but as more and more pupils are obtaining them, this has begun to change. In some regions, pupils with lower secondary qualifications feel crowded out of the dual system.

The German *dual system* finds itself in a paradoxical situation. Interest in it is growing internationally, because the system creates a link between the training system and the labour market and in this way offers many young people a better transition into the world of work. At the same time, however, it is under pressure at home, because the number of companies providing training is at an all-time low. Since 2009, almost 50,000 companies have stopped providing training places. Only 20 per cent of all companies now provide training; in 2007, it was around 24 per cent. Small and very small enterprises with up to nine employees in particular are withdrawing from the vocational training system. At the same time, the number of unfilled training places is rising. In 2016 alone, businesses were unable to fill around 43,500 training places (BMBF 2017).

→ FOOD FOR THOUGHT STRENGTHENING THE DUAL VOCATIONAL TRAINING SYSTEM

The dual vocational training system strengthens companies' *power to innovate*. The training provided in the dual system, geared as it is to companies' needs, produces high-quality vocational qualifications and skills, which in turn results in high rates of transition into the labour market and prevents high youth unemployment. According to figures from the Federal Statistical Office, almost half of each year group passes through the dual training system. In this way, young people in Germany are integrated into the world of work more successfully than in virtually any other country in Europe. Again and again, targets for the expansion of academic education in Germany are being put forward. Those doing so, however, are ignoring the *efficiency* of the dual system and the fact that many professions that would require a university education elsewhere (e.g. nursing, early-years education) only call for non-academic training in Germany.

In order to make the system fit for the future, the following measures are recommended:

- *Occupational profiles and training regulations* should be reviewed at regular intervals and amended in line with changing requirements. The procedures and bodies for the evaluation of training regulations and standard curricula, in which the social partners are also involved, provide the basis for this. It appears necessary to extend these regulations, which are based on the Vocational Training Act and the Trade and Crafts Code (Handwerksordnung), to the degree programmes combining academic studies and on-the-job experience and to the technical schools, which have hitherto been regulated by legislation at the Länder level.
- Vocational training should be made *more permeable*. Even young people with poor educational qualifications should have opportunities to access vocational training and obtain a vocational qualification, e.g. through the expansion of 'assisted training'. Connectivity with further vocational training and academic education should be guaranteed in both the company-based and school-based part of the training (e.g. by making additional provision for trainees).
- *Training opportunities for adults* should be expanded and training programmes adapted to the needs of adults who are embarking on initial training or completing a new training programme.

Ideally, continuing training should be included in the *design of occupations*. In many occupations in the dual system, continuing training is already in place, e.g. in the form of advanced or upgrading training. Even in many graduate occupations, specialist continuing training is a prerequisite for maintaining registration. However, continuing training is far from being systematically incorporated into all occupational profiles. There is also a lot of catching-up to do at company level. Here, *learning systems integrated into work stations* are required, together with a *working environment that promotes learning* and continuing training provision that dovetails with *employee development programmes*.

POINT OF CONTROVERSY LEGAL ENTITLEMENT TO FUNDED PART-TIME TRAINING LEAVE FOR ALL?

The Commission vigorously debated the introduction of a legal entitlement for all to state-funded part-time training leave (e.g. along the lines of the Austrian system). For some, the introduction of such a right seemed overdue, while others questioned the appropriateness of a universal entitlement. While it was true that such a right would presumably trigger a great deal of very welcome continuing training activity, at the same time an instrument of this kind might well be seized on by those who started their working lives with high levels of educational capital, which would simply reinforce educational inequalities. Financial support should rather be targeted at those with low levels of formal education, for example by improving programmes aimed at unskilled workers. The Commission did not reach agreement on this issue, but did stress the need to discuss *individual entitlements to continuing training* as a matter of urgency.

POINT OF CONTROVERSY

STRENGTHEN THE ROLE OF CODETERMINATION IN CONTINUING TRAINING?

The Commission also debated the role of codetermination in initial training, retraining and continuing training. Employer-provided continuing training is acknowledged by all the actors in employment policy as the key factor in structural change; however, as already noted above, actual provision is selective and inadequate. This raises the question of whether works councils have sufficient instruments to push through the training required for structural change.

The Works Constitution Act confers rights of codetermination in initial and continuing training in three areas: job protection, vocational training and human resources planning. As far as job protection is concerned, there is a right to put forward proposals and to be consulted but no right of initiative. If the employer rejects the works council's proposals, there is no further recourse. However, since retraining programmes are too important for decisions to be left up to one side only, consideration should be given to incorporating genuine codetermination into the Works Constitution Act.

Codetermination rights have also been limited in the areas of vocational training and the implementation of training measures. According to the Works Constitution Act, the works council's right of initiative is restricted to initial and continuing training activities that are already under way. In order for works councils to be able to play an active role in planning for change, a debate is necessary on extending their rights to include future measures as well.

The responsibilities for initial and continuing training outlined above can overburden many companies, particularly small and medium-sized enterprises. The Federal Employment Agency provides a consultancy service, but it remains difficult for companies to assess what to train employees for. For companies to take advantage of the full range of pedagogical expertise, new forms of collaboration are required.

→ FOOD FOR THOUGHT MORE INTER-FIRM COOPERATION ON CONTINUING TRAINING

The Federal Ministry for Employment and Social Affairs' programme 'Protecting skilled workers: promoting continuing training and equality', financed by the European Social Fund, provides support for the social partners to increase employees' participation in continuing training. Support is provided for, among other things, the establishment of *interconnected continuing training facilities* in small and medium-sized enterprises and the implementation of firm-based and inter-firm continuing training measures.

The Commission urges companies to take advantage of this initiative and establish more training networks in order to address the changing training requirements on a cooperative basis. This would be especially advantageous in sectors dominated by medium-sized and, in particular, small companies.

One example of this is to be found in the *construction industry*. At the heart of the model developed by the German Construction, Agriculture and Environment Union (IG BAU) and the employers' associations are *sectoral training levies*, which have to be paid by companies on the basis of collective bargaining agreements that have been declared binding for the industry. The monies are administered by sectoral social security or supplementary benefits funds (run jointly by those party to the collective bargaining agreements) and are used mainly for funding inter-firm training centres. These centres supplement the work of the vocational training schools by taking responsibility for parts of the practical training. These inter-firm training centres are often subject to minimum quality requirements, which also include regulations on the (digital) equipment to be provided and continuing training provision for trainers. In some parts of the construction industry, levies are used to fund not only initial training but also *advanced and continuing training programmes*. As far as advanced training is concerned, the social security fund pays all costs incurred (including reimbursement of wage costs) when attending a training course, thus offering a financial incentive to do so. To the Commission, such forms of inter-firm cooperation in initial and continuing training seem to be an appropriate response to current needs and could be applied to other sectors.

Continuing training in Germany is provided mainly by commercial enterprises and adult education centres. The other education and training institutions have enormous potential for *expanding continuing training provision* that has gone untapped. And when it comes to putting into practice the ideal of broad-based, integrated education and training, as outlined in this chapter, the *universities* could also make an important contribution to continuing education.

→ FOOD FOR THOUGHT UNIVERSITIES: A FUNDING COMPACT FOR CONTINUING EDUCATION

After a lengthy period on the job, many people must or would like to top up their qualifications. *Universities and universities of applied sciences* (the Fachhochschulen) are well suited to developing and expanding the provision of continuing education and training, e.g. in the form of seminars or post-graduate and extension programmes. To date, however, they have failed to exploit those possibilities. Furthermore, continuing education has tended to be targeted principally at people who already have a degree or are still studying.

This must change. Access must be made easier (applicants are generally required to have the higher secondary school qualifications) and provision must be tailored to the needs of people in work. Furthermore, curricula must be developed that are below the threshold of a full university degree or post-graduate programme.

For universities to develop into genuine providers of continuing education for groups beyond the 'core clientele', incentives and financial support will be required. Universities nationwide are hardly ready for this new role: neither teaching times, staffing levels, approaches to teaching nor teaching budgets are geared to this change in their operations.

One possibility for changing this is to further expand the current *University Compact*, which provides extra funding, mainly from the federal government, to universities to help them accommodate the sharp increase in students. Begun in started 2007. it is set to expire in 2020. At least part of the monies allocated to a new programme could be earmarked for universities making special efforts to offer *academic*

continuing education programmes for practitioners. At the same time, however, the temporary nature of the Compact creates a major difficulty for the universities. They cannot turn themselves into providers of continuing education on a temporary basis and develop new approaches to teaching, admission regulations and validation procedures. They need *dependability in planning*, based on the knowledge that this commitment will continue permanently. Since demand for teaching staff in continuing education is very likely to increase, universities will very soon find themselves in a weaker bargaining position because of the rules stipulating fixed-term employment for many of their employees. These need to be reformed so that employment conditions in the university sector do not become an obstacle to the development of education fit for the future.

OFFER LEARNERS ADVICE AND FINANCIAL SUPPORT

The focus of many initiatives and deliberations on lifelong learning is on continuing education and training. However, the future direction for people's career trajectories is often set in initial training and on entry into working life. For some, 'lifelong learning' is a positive promise, but for many it is a cause for concern because the implicit message of the slogan is that without the 'right' continuing education it will be difficult to maintain one's position in the labour market.

Parents are in many cases the most important source of advice when it comes to educational choices. This role is not only accepted by children but actively sought out (HURRELMANN 2014). At the same time, many parents are limited in the advice they can offer because they are hardly in a position to offer a comprehensive evaluation of how the labour market is evolving and how occupations are changing. Adults, in turn, not only find themselves confronted by a confusing market in continuing training but they are also not always able to assess their needs and the suitability of an advanced training programme on their own.

→ FOOD FOR THOUGHT ADVICE ON EDUCATION AND TRAINING OVER THE LIFE COURSE

The Commission sees advice and guidance as a core element of a preventive education and training policy. A new *culture of advice* should be established, in which *individual and neutral advice is on offer to all*, regardless of individual starting positions and ambitions.

The Commission supports ideas for a *continuing training advice service*. If such a service offers neutral, independent advice, easily accessible and at no cost, is well widely advertised and employs well-qualified staff working to clearly defined standards, then that would constitute a solid basis for lifelong learning. The Federal Employment Agency is already heading in the right direction with the expansion of its careers service to include lifelong vocational guidance. The Agency's lead in this area can be developed into a sustainable system. However, if a training or continuing training advice service is to be incorporated into the Federal Employment Agency, then care has to be taken to ensure that it operates independently of the Agency's and job centres' other functions and that the acceptance or rejection of advice is not linked to sanctions. In the long term, it would be sensible to develop more comprehensive forms of advice on education and training that begin with young people of school age and provide information on the transition into training and work, development options, career change and possible sources of (financial) support. Much can be learnt from *education guidance programmes* in other countries, e.g. from the 'education and training counsellors' in Austria.

In universities there is extensive provision of advice and counselling on courses, changing subject or the transition into employment after graduation. However, for those who do not get on at university and might best switch to another part of the education system or into vocational training, there is little in the way of support. University advice services are usually not prepared for such cases and can only refer students to the employment agencies.

It would be helpful to establish organisational and institutional links between student advice services and the services provided by employment agencies, the chambers of commerce and industry and other advice and counselling services. Such provision already exists, but only in the form of pilot schemes set up on a temporary basis.

Continuing education is becoming increasingly important in order to safeguard employment. The Federal Ministry for Employment and Social Affairs, also with a view to promoting continuing education, has launched an initiative on developing the unemployment insurance scheme into an *employment insurance* scheme. Except for the plan for an advice service on continuing education, not many details are known as of yet. An insurance scheme of this kind, which does not simply kick in when a person actually becomes unemployed but as soon as there is a *threat of unemployment*, would be a proactive reaction to the transformation in the world of work.

The current plan is very much focused on the continuing education advice service; one aspect in particular need of clarification would be the support to be provided for vocational training. The possibility of pursuing another vocational training programme at a later stage of the working life is becoming increasingly important. Firstly, people who missed out on training at the beginning of their working lives need a *genuine second chance* (BOSCH 2010). All the studies show that an unsuccessful entry into the labour market, whether because of a lack of academic qualifications or a failure to obtain training, creates lifelong disadvantages. People have to be able to make up for a lack of training that others acquired at an earlier stage of their lives. Secondly, structural change means that many workers will have to *change occupations* in the second half of their working lives. It is crucial that earnings losses and wage costs should be compensated to a greater extent than today while workers are training.

Individual elements of the financial support available for continuing training and education – such as government support for university students (BAföG) or those studying for a master craftsman's diploma (Meister-BAföG) and scholarships for those who excelled in their vocational training – exist alongside each other but are not connected. Bringing student financing, funding for those making up for a lack of qualifications and support for professional advancement together in a single *Education and Training Support Act* would create greater transparency and close the gaps in support.

→ FOOD FOR THOUGHT FINANCIAL SUPPORT FOR SECOND CHANCERS

As early as 2004, the Expert Commission on ‘Financing of Lifelong Learning’ (DEUTSCHER BUNDESTAG 2004) pointed to the *need to extend the mandate of the public education system to adults*. However, state support past the age of 25 for individuals seeking, on their own initiative, to make good a lack of academic or vocational training qualifications addresses a very limited number of cases only (the unemployed and those imminently threatened with unemployment). In the Commission’s view, more opportunities must therefore be created for adults who decide to catch up on their education or training or to make a career change.

Since many adults have not acquired basic qualifications in their youth or have been unable to find jobs even with a vocational qualification, public *responsibility for the funding* of general education and vocational training must be *extended to adults*. Consequently, the Commission proposes that the tried and tested system of student support (BAföG) should be developed further and that a general education and training *assistance scheme for adults* should be introduced that provides support (as the current scheme does) for those who do not have sufficient income or assets of their own. Incentives for employers to terminate employment must be avoided in this context. On the contrary, higher wage cost subsidies for employers might well encourage workers to embark on the continuing training programmes that give workers a prospect of long-term employment.

Detailed consideration suggests there are various points that would have to be taken into account in such a reform. Firstly, priority should be given to unemployed individuals who wish to undertake training. Age limits on this and similar instruments should also be reviewed. The age limit for financial support for a master’s degree is, in the Commission’s view, still too low. In the course of the Bologna reforms, the age limit for such support was raised from 27 to 35. This limit must be raised again. In order to avoid excessive debt on completion of a course of study, it would seem sensible to reduce the loan element and increase the grant element; tax exemption limits and maintenance allowances should also be raised. Support should be up-rated automatically in line with inflation.

WORKING TIME

TIME SOVEREIGNTY IS THE SOLUTION



The image is a vertical composition of three distinct scenes, all rendered in a monochromatic red color. The top scene shows a person's legs and feet walking on a set of stairs, with a blurred background suggesting motion. The middle scene is a close-up of two hands; one holds a white smartphone, and the other is positioned over a tablet device. The bottom scene shows a person's hands typing on a laptop keyboard, with the laptop's screen and keyboard visible. The text is positioned in the upper right quadrant of the image, set against a white background that contrasts with the red-tinted images.

**CAPITALIZE ON
THE POSSIBILITIES,
CHANGE
THE PRIORITIES**

WHERE DO WE STAND?

There is scarcely a topic that is debated as intensely as *working time*. It is not only between employers and trade unions that the arguments rage, but also between employees in the workplace, in work teams and even in families and between couples. Who spends how much time, when and for what purpose (and with what degree of time sovereignty) will determine income opportunities, the chances of self-realisation and employment biographies.

This makes the time question an *issue that affects people's entire lives* – and a key issue in collective bargaining agreements, agreements on the company-level and work organisation.

Disputes around working time are as old as work itself. The key point at stake is who has the right to control and what issues are linked to working time. For employees, these are income, recovery time and opportunities for continuing training and promotion; for employers, they are the leeway they have for flexible staff deployment and labour costs.

THE STATUS QUO IS MURKY. For many years, the ‘male family breadwinner cum housewife’ model of the family was dominant in Germany. Today, the full-time/part-time model predominates among working couples, with women reducing their working times when they start a family. At the same time, *working-time preferences and realities are very diverse*: there is a motley collection of models for achieving some degree of work/life balance, women are more generally active in the labour market and female family breadwinners are part of the new reality.

People's preferences for structuring their working time are very diverse. Many young workers who enjoy their work, do not feel overburdened, have a good position in the labour market and as yet no care responsibilities are indifferent to the formal restriction of working time. They regard any separation or even a strict division between

work and leisure time as outdated. They want to work in a way that suits their own needs and ideas about work. In contrast, there are those who want nothing more than to restrict working time. The reasons for this vary considerably. They range from unsatisfying work to care responsibilities, interests outside work and overwork. It is this diversity of needs that makes the structuring of working time a Herculean task.

Social inequality is reflected in the volume of working time. Arguments around working time often focus on its distribution. Companies prefer greater or smaller numbers of hours for certain groups of workers. Such flexibility in staff deployment not always fits with people's needs. Low-skill workers often want to work longer hours because they are dependent on a certain number of hours per week in order to ensure their livelihoods (→ **INCOME**), while more highly skilled workers often want to work less in order to preserve their health or because they have care responsibilities.

Average weekly working time in Germany is 41.4 hours, which puts Germany in 12th position among the 28 EU member states.¹ According to figures from the Federal Institute for Occupational Safety and Health, full-time dependent employees in Germany work 43.5 hours per week on average, which is actually almost five hours per week more than the average working time as spelled out in employment contracts (BAUA 2016). What is striking is the *mismatch between time preferences and working times*. According to Socio-Economic Panel² data, 39 per cent of female and 46 per cent of male part-timers would like to increase their working times to part-time arrangement with longer hours. At the same time, 43 per cent of female and 31 per cent of male full-time employees say that they work more than they want to and than is contractually agreed.³ On average, workers in Germany have the highest volume of overtime in the euro-zone. Sixteen per cent of those who work overtime put in more than ten extra hours per week.

1 If certain statistics show shorter working times than these data from EUROSTAT (2016), it is because they include part-time workers. This quickly gives rise to the false conclusion that Germany is the leisure time world champion.

2 A longitudinal survey (panel study) of German households.

3 This discrepancy is confirmed by all studies of working time, albeit to varying degrees.

THE VOLUME OF WORK STAYS CONSTANT BUT IS DISTRIBUTED AMONG MORE PEOPLE.

More and more people are active in the labour market. The number of standard employment relationships has also risen again recently. However, according to the IAB (the Institute for Employment Research, a special office of the Federal Employment Agency) the volume of work (full-time plus part-time jobs including side jobs) has remained constant at 50.3 billion hours per year. These two statements are not mutually contradictory because the part-time rate in Germany has risen sharply since the early 1990s. The increase in the female part-time rate, at 17 percentage points, significantly outstrips that in the male part-time rate, which is eight percentage points. In 2014, 58 per cent of economically active women were working reduced hours, compared with only 21 per cent of men (WANGER 2015; HOBLER et al. 2016). The number of workers in marginal part-time jobs (so-called 'mini-jobs') has also risen (→ **PARTICIPATING IN THE WORLD OF WORK**). As a result, there is a large group of workers whose jobs do not provide them with an independent livelihood but are dependent on support from other household members or income from other sources (private assets, family support, social security benefits).

WOMEN ARE INTEGRATED ON A PART-TIME BASIS. The extremely unequal division of working time between the sexes is regarded as 'characteristically German'. Men do approximately ten hours' more paid work per week than women; conversely, women devote about ten hours more per week to domestic and family work. However, this distribution is not entirely a reflection of individual preferences. Almost one fifth of female employees would like to do at least five more hours' paid work, whether for financial reasons, because they are concerned about being disadvantaged in career advancement or simply because they have a pronounced inclination towards paid work (SEIFERT et al. 2016). Part-time work often goes hand in hand with low hourly pay (→ **INCOME**), few chances of promotion and inadequate provision for old age.

In order to avoid these traps of part-time employment, a binding right to return to full-time work is currently being discussed; the Federal Ministry for Employment and Social Affairs has published a draft bill on the matter. Such a right would make it easier to decide in favour of reducing one's hours for family and care work. Despite some belated reforms to family policy (such as the expansion of child care

provision and the introduction of the parental allowance), many mothers and fathers feel torn between the two; the world of work is still seen as not family-friendly enough.⁴ Twenty-two per cent of part-timers work reduced hours because the position they applied for was not offered on a full-time basis. An increased supply of long part-time or full-time jobs would further increase women's participation rate, as happened when childcare provision was expanded.

WORK IS INTENSIFYING. You cannot talk about the volume of work without talking about its intensity. The reduction in working time, which was still 48 hours per week in the 1950s for full-time workers, could be implemented only at the cost of work intensification. The pace and intensity of work have increased still further; productivity in Germany today is very high by international standards. Much of this is due to the acceleration of work processes as a result of automation and the increased use of information and communications technologies. According to the Federal Institute for Occupational Safety and Health, many workers attribute the feeling of overload largely to increased pressure of work and intensified processes. Consequently, the structuring of working time is increasingly being seen as pivotal to workplace health and safety (→ [WORK ORGANISATION](#)).

WORK OUTSIDE 'NORMAL' HOURS IS WIDESPREAD. Disputes around the *scheduling of working time* have always been triggered by the question of when working times that employees regard as undesirable should attract additional compensation. Certain premium payments are stipulated in law. Seventeen per cent of dependent employees work nights and/or shifts. According to census data, there has been a significant increase in weekend and evening work since the 1990s. The number of people who work 'permanently' and 'regularly' at these times has risen by around five percentage points and the number who do so 'very often' or 'often' has increased even more (BRENKE 2016). Women part-timers and low-wage workers are particularly likely to work outside standard hours. Many companies use part-timers to provide flexibility; many service occupations (e.g. in catering) are associated with working times outside the 'nine to five' norm. In some cases, this suits some people's preferences, but in other cases a

4 The last two reports on the family published by the federal government have referred to these time conflicts experienced by parents and carers (BMFSFJ 2006, 2012). See also ALLMENDINGER/DRESSEL 2005.

contract for non-standard working hours was all that was on offer. Although work outside the 'nine to five' norm in emergency and health services (police, hospitals) is widely accepted, the trend towards the around-the-clock society is giving rise to concerns. Researchers have warned that *collective leisure time* is being lost, which may in turn have negative effects on *social cohesion*.

MORE AND MORE PEOPLE ARE WORKING IRREGULAR HOURS. The scheduling of working hours is closely linked to their distribution. This has to be flexible if the volume of work fluctuates over the day, week, month or longer periods. Such fluctuations are usually managed by means of *working time accounts* which, according to the Federal Institute for Occupational Safety and Health, are held by 61 per cent of all employees (BAUA 2016). There is, however, little valid data available on the usage of the numerous models that are theoretically available. Most offer time off in lieu, but in some cases the credits are paid off

5 In the 2008/2009 economic crisis, these instruments proved their worth as companies were not forced to dismiss their employees and jobs were saved.

6 Moreover, the legal entitlement to ask to work part-time applies only to companies with more than 15 employees, which disadvantages those working in smaller organisations.

or used for job protection.⁵ Research has revealed the often limited control that workers have over their working hours and has identified a *division* within the labour force. Workers who are very well positioned in the labour market, those in companies that adhere to collective bargaining agreements and those who are represented by a works council have a far greater chance of having their time preferences taken into account than all other groups in the labour market.⁶

THE WORKING TIME CONFLICT IS BEING INDIVIDUALISED. The EU Working Time Directive, national working time legislation, collective bargain-

ing agreements and agreements on the company level draw on research findings to lay down standards for the organisation of working time. They are the metaphorical handholds and guardrails that help employees to assert their working time preferences. This is important because employers are increasingly expecting scheduling by the employees themselves, for example when they are free to work when they wish provided their targets are met within a certain time frame. However, there will be only very limited control over working time if there is no influence over work processes, if the targets are set too high or if staffing levels are too low (→ **WORK ORGANISATION**).

Working time disputes sparked by new forms of work are no longer played out solely between employers and employees or within work teams but also *within individual employees themselves* (DUNKEL/KRATZER 2016; HANDRICH et al. 2016). Time stress and overload can be the consequences. Attempts at finding a solution are often intended not to eliminate structural problems (such as inadequate staffing levels or poor work organisation) but rather to optimise individual time management skills. Thus flexible working time does not automatically mean a better work-life balance. It can only lead to solutions that satisfy the interests of both sides if working times can be scheduled in advance and employee control over working time is actually guaranteed (i.e. is stipulated in law, in collective bargaining agreements or in employment contracts).⁷

CORPORATE CULTURE AS A SOLUTION? Greater significance is often attributed to a company's mode of work organisation and its *time culture* than to formal agreements. There are numerous examples of sustainable human resources policies in companies, but the extent to which individual time preferences are realised varies considerably depending on employees' status within the company and their labour market position (KLENNER/LOTT 2016). Many working fathers still bemoan employers' reluctance to agree to reduced working hours. The rights to leave of absence for volunteer work or to care for family members is not exercised in many companies. Even for highly skilled workers, there are barriers: frequently there is a failure to realise that management positions can also be divided or carried out by part-timers (→ **WORK ORGANISATION**).

⁷ Only 38 per cent of employees are largely able to determine their start and finish times (BAUA 2016).

WHAT SHOULD WE BE PREPARING FOR?

People's working time preferences are likely to become further differentiated in the years to come. Many workers will have family members to care for, which will give rise to further demands for flexibility. If continuing training is to become a normal part of the life course, repeated time-out periods will have to be granted. Some people will continue to work full-time without interruption for the whole of their working lives, but they will be mainly women without children and men. At the same time, however, other models will gain acceptance and become widespread. Management and works councils will be required to find creative solutions for this.

FLEXIBILITY REMAINS CONTRADICTIONARY. Many companies leave the organisation of working time to their employees. In these cases, many employees start work early in the morning, then take a number of breaks and sometimes complete their tasks late in the evening. The advances in information and communications technologies have made *mobile working* possible. For many, this flexibility is just what they are looking for. At the same time, research on sleep and health has shown the negative effects of a working day without a definite end (CRARY 2014). Moreover, when people resume work for a brief period, they often do not count that time as working time, which can lead to a *creeping expansion of total working time*. Yet from a technical standpoint, it has never been easier to record working hours accurately. It would also be possible to place a limit on working time by making use of 'digital shift work', in which globally networked workers organise themselves into job-share pairs.

IS TIME LOSING ITS IMPORTANCE AS A YARDSTICK? For a long time, employers have managed their employees' effort by means of performance targets rather than working time. This trend will continue, in high-skill jobs and beyond. Thus the regulatory requirements concern not only the question of working time but also performance

expectations. This is a particular challenge in Internet-based crowd work. At the same time, however, the wide-ranging public debate on excessive demands at work and exhaustion is part of an observable trend towards ‘limiting the removal of limits’. The younger generation in particular (‘Generation Z’ or the ‘post-millennials’) is ‘always on’, but nevertheless (or maybe precisely for that reason) seems to want a clear division between work and leisure time (SCHOLZ 2014).

WORKING TIME POLICY MUST KEEP PACE WITH CHANGED REALITIES.

If men and women become equally involved in paid work, the pressure on *families’ time planning* can only increase. If the problem of making working time sufficiently flexible to meet the demands of families is not resolved, there are likely to be negative effects on family life, couples’ decisions on starting a family or having more children and on workers’ health. Furthermore, it is already evident that predominantly individualised solutions force unwanted flexibility on others, e.g. care workers. Demand for support services rises, which in turn leads to an increase in work outside the ‘nine to five’ norm and on weekends. Thus the options for socially acceptable and collective leisure time in the wider society remain to a large extent dependent on the extent to which solutions to the changing time requirements can be found in the workplace.

WILL GENERAL WORKING TIME REDUCTIONS MAKE A COMEBACK?

After generalised linear reductions in working time stalled, the various scenarios for digital change and its potential for rationalisation have ratcheted up the debate on working time. For many people, technical change has awakened hopes of a new age of ‘temporal affluence’. The notion of a solidaristic redistribution of the volume of work in order to prevent job losses is gaining increasing acceptance. At the same time, the current working time norm is coming under pressure because of women’s increasing participation in the labour market. How can full-time work be defined and organised in such a way that it recognises family and care work as socially necessary work? Many of the debates and proposals on how to reconcile paid work and care work, how to slow down the so-called ‘rush hour of life’ (i.e. the phase in which most of life’s major tasks are concentrated) and how to change the family division of labour are aimed at safeguarding livelihoods and opportunities for participation (e.g. in training) for those working less than full-time.

WHERE CAN WE BEGIN?

The debate on working time policy touches on the central question of the *weighting of interests or preferences*. How can flexibility serve the needs of business and the economy while at the same time being organised in a socially acceptable way that affords workers time sovereignty? In view of the pressing problems that arise when it comes to reconciling paid work and care work and the health risks for employees, which generate massive costs for a society based on the principle of mutual solidarity, it is essential that a balance be struck between conflicting interests. An ageing society, the rise in women's labour market participation and, not least, the increased demand for training make the time question one of the key issues in managing digital change.

PLURALITY IS THE NEW NORMALITY

In the wake of women's increasing involvement in the labour market but above all because of the current diversity of employment forms, the distinction between 'standard working time' and 'flexible' or 'atypical' working time is becoming increasingly obsolete (→ PARTICIPATING IN THE WORLD OF WORK). Women are very much in demand in the labour market and need flexible working time models in order to be able to balance paid work and family responsibilities; men too no longer adhere to the rigid norm of full-time employment throughout the whole of their working lives. However, despite the obvious diversity of forms of working time, the old mechanisms of a 'fictitious' normality continue to exert an influence. Anybody who reduces their working time, whether occasionally, in the interests of flexi-

bility or permanently, in order to devote more time to their families, to take care of relatives, to do voluntary work or to retrain, to take an enforced break because of work overload or simply to enjoy more free time, indulge in a hobby or have a less hectic daily routine, abandons the old norm and as a result, and despite all the improvements of recent years, still has to deal with the negative consequences.

→ FOOD FOR THOUGHT SURVEYING WORKING TIME PREFERENCES IN THE WORKPLACE

Numerous representative surveys and industry-level evaluations confirm how diverse working time realities and preferences are. These insights into the motives and needs of those seeking flexible working times are helpful at company level so that employees' needs for flexibility can be considered. However, they tell us nothing about employees' actual preferences or, where relevant, their 'time crises'. Consequently, companies should be required every few years to conduct a *survey of working time preferences*.

The data obtained this way can be used as the basis for devising new flexibility models, whether for the company as whole, for individual departments or for specific groups of employees. This will benefit not only employees but employers as well. By having at their disposal information on the changes required in their processes and rules, they will be able, firstly, to avoid the adverse side effects of time stress, such as demotivation, illness and high turnover, and, secondly, to make their processes more efficient and deploy their workforce more effectively.

→ FOOD FOR THOUGHT USE WORKING TIME AS AN INSTRUMENT TO SHAPE THE FUTURE

The purpose of working time policy is not simply to react to existing need and to balance out conflicting preferences for availability and leisure time. Rather, the organisation of working time must be seen as an opportunity for changing the world of work and its time arrangements (and hence society as a whole) in such a way that *future challenges* can also be managed.

Flexible working times are the answer to the ‘care crisis’ and ‘exhaustion as a national disease’ – as well as to the campaign that is required to increase participation in continuing training. The German social partnership is internationally recognised for its record of devising *innovative working time models*. If flexible working time arrangements are made more widely available, then it is highly likely that employees’ preferences will also change.

This has already been demonstrated in the case of childcare, where an expansion of provision led to an increased demand for employment. Even working time reductions introduced by companies in order to protect jobs have triggered new time preferences. Many employees whose working times were reduced for economic reasons (e.g. at Volkswagen or the automotive component supplier Bosch in Stuttgart) subsequently preferred to stay on the shorter hours because they had found new priorities in their lives.

→ FOOD FOR THOUGHT PROVIDE BETTER INFORMATION ABOUT WORKING TIME OPTIONS

Whether or not employees take advantage of the various working time options open to them is very closely linked to whether they actually know anything about them and whether they view them as 'legitimate', regardless of any legal entitlement.

It can be concluded from research findings that many workers are not well informed about the various options for leave or other support measures; information on care leave seems to be particularly lacking. At the same time there is evidence that working time preferences are frequently put on the back burner when there are staff shortages. It can be supposed, therefore, that new statutory instruments, e.g. aimed improving work-life balance, will not be effective at company level unless they are made known and promoted. It would seem necessary, therefore, to review the arrangements for disseminating information. Human resources departments and works councils have an important role to play as information multipliers.

NEGOTIATING ON EQUAL TERMS

However diverse employees' working time realities and preferences may be, criteria for the negotiation of working time can nevertheless be specified. The extent of *participation and autonomy* is fundamental. To date, however, they have been granted on a limited basis only. According to the German Trade Union Confederation (DGB) and its Good Work Index, almost two thirds of employees may take a day off on short notice, but 41 per cent have virtually no voice in decisions on the scheduling and duration of their working time. Eurofound's company survey also shows that only 32 per cent of companies offer the majority of their employees the possibility of adapting their start and finish times to their needs. Fourteen per cent can decide on the spur of the moment to work at home. According to the DGB, it is not unusual for employers to alter work schedules on short notice: one in every six employees states that their working times are changed frequently or very frequently this way by their employer. More than two thirds of these changes take place on the day before or even on the same day.

FOOD FOR THOUGHT LAY DOWN

RULES OF PROCEDURE

The need to have time for care work, rest and recovery and training is a concern for individual employees as well as for companies and society as a whole. A way must therefore be found to strike a better balance between employers' expectations of availability and employees' desire for time sovereignty, thereby ensuring that employees' health is protected better.

The Commission regards the current regulatory framework, with its gradation of legislation, collective bargaining agreements and agreements on the company, as successful. At the same time, however, it also considers it necessary to open up the opportunity to exercise time sovereignty *throughout the working population*. Time sovereignty must also be made possible – with a good chance of being imple-

mented – in those sectors of the economy where there is no coverage by collective agreement and no staff or works councils; it must no longer depend on the whim of a supervisor, on the size of a company or on a company's culture.

The Commission proposes, therefore, that *rules of procedure* and hence a *collective framework for individual negotiations on equal terms* should be established. In order that employees have options for participation regardless of their labour market position and status within the company, 'handholds' to support and guide them should be built in *along the chain of formal rights*:

— An *entitlement to discuss* working time, place of work and work schedule could be incorporated into the *Part-Time and Temporary Employment Act*, together with an *obligation on employers to justify* any refusal of an employee's wishes. There is no intention in making this proposal to ignore operational requirements; rather the *participation processes and conflict resolution mechanisms* should be designed in such a way that individual employees are given real options to fulfil their interests, which are socially desirable as well. The *Works Constitution Act*, which since 1981 has placed the reconcilability of family life and paid work within the remit of works councils, could be amended to include a right of codetermination in the matter. Works councils could then effectively mediate the time preferences of employers and individual employees.

— *Collective agreements and agreements* on the company level could adopt this basic philosophy and lay down procedures for planning and or negotiating working time, using the legal framework to arrive at industry- and company-specific provisions.

Many works councils find themselves in a difficult situation. They cannot ignore violations of statutory and/or agreed limits on working time and are obliged to draw attention to health risks; however, they do not want to be pushed into acting as the 'working time police'. They respect employees' personal responsibility, but their role obliges them to address concerns not only about the risks of excessively long working hours but also about the power asymmetries that characterise working time negotiations. Regulations that employees identify with, decided on through participative processes, also increase acceptance of the works councils' role in working time issues. Companies also benefit if the workforce is deployed in a sustainable fashion, since the costs associated with labour turnover and sickness are reduced and skilled workers are more easily retained.

Nevertheless, *learning processes* are still necessary on several levels. Works councils and human resources managers must first accustom themselves to the diversity of employees' working time preferences and then recognise that a one-size-fits-all working time norm is increasingly being called into question. A balance between the various working time preferences within a team can be successfully struck, but only if team members have received the necessary training and/or appropriate support from management. In small and medium-sized enterprises in particular, it will be necessary to provide specialist advice on the introduction and successful implementation of such negotiating processes.

Also of crucial importance are the *rules on maintaining staffing levels* when employees take time out or working time is reduced, so that adverse side effects such as work intensification and work overload for co-workers, as well as conflicts within work teams, can be avoided [→ WORK ORGANISATION].

POINT OF CONTROVERSY COMPENSATE FOR LACK OF TIME SOVEREIGNTY

However much the proposal for rules of procedure is motivated by a desire to create a regulatory framework for flexibility that works in the interests of employees, it is foreseeable that in certain areas there are fewer possible options for working time sovereignty, particularly for those who regularly work shifts and are employed in organisations that operate 24/7.

Consequently, efforts should be made to find ways in which employers might *compensate* employees whose jobs offer little if any scope for flexibility with regard to the place of work and the scheduling of working time. Such compensation can be justified, firstly by the negative health implications of shift work, for example, and secondly from the point of view of fairness.

Some companies have already introduced collectively agreed measures that offer pointers as to how such compensation might be organised. Deutsche Telekom's customer service division, for example, offers employees who work weekends and other non-standard times compensation in the form of a working time reduction in the following month. Extra time off would also be a conceivable form of compensation in situations in which control over working time is not or cannot be granted. While large companies are more easily able to manage such compensation, this is not necessarily the case in small companies, particularly in sectors in which flexible working times are not possible for the majority of the workforce.

Consequently, the possibility of government support, e.g. by (partially) offsetting the additional costs of model working time arrangements in SMEs, should be considered (even though this suggestion was a controversial one within the Commission).

→ FOOD FOR THOUGHT RESTRICT THE SPREAD OF WORK ON DEMAND

The diametrical opposite of time sovereignty is capacity-oriented variable working time. This work ‘on demand’ prioritises operational requirements in a completely unacceptable way. Nevertheless, according to the IAB, 13 per cent of companies with more than ten employees use this form of flexibility, which is permitted by the Part-Time and Temporary Employment Act. The (technically) self-employed service providers who receive work via online platforms (e.g. courier services) also work on this principle.

People engaged in this form of work are usually poorly paid because the time between jobs is not remunerated, in contrast to being on-call or stand-by. They also have to accept considerable restrictions on planning their lives and organizing their free time. It is true that there is a statutory period of prior notice (four days), but in practice this is more or less ignored. Such a one-sided arrangement, determined solely by the employer, is regarded as *contra bonos mores* in Austria. In Switzerland, the law at least stipulates that stand-by time must be remunerated. Thus § 12 of the Part-Time and Temporary Employment Act, which permits work on demand, could simply be struck out, which would leave the risk for fluctuations in workload squarely with the employer. Another option would be to follow the Swiss example and ensure that stand-by time was remunerated.

It is also important to continue to reject zero-hours contracts, as used in the UK for example. Workers on these contracts are paid only for the hours actually worked and the employer is not obliged to provide any minimum working hours.

WORKING TIME LIMITED

Germany is regarded as the eurozone's overtime 'champion'. If full-time employees constantly exceed their contractual working hours, this is not only damaging to their health but can also give rise to costs due to illness, workplace accidents and early retirement. Overtime is also a factor in the reconcilability of paid work and care work, since anyone who is constantly working overtime is hardly in a position to take on any care work or to support family members and/or partners who do so.

In the debate on restricting overtime, it is argued time and time again that these extra hours are worked by employees for whom no substitutes are available. In fact, however, research has shown that it is absolutely not just skilled workers in short supply who do overtime. Overtime is worked across a whole range of sectors by employees of different statuses and skill levels. In a survey conducted by the Federal Institute for Occupational Safety and Health, 18 per cent of respondents gave enjoyment of their work as a reason for working overtime, while 6 per cent declared that they worked the extra hours for private reasons (e.g. to earn extra money). The rest of the respondents (76 per cent) cited operational requirements (BAUA 2016).

→ FOOD FOR THOUGHT RETURN TO AGREED WORKING TIMES

In order better to protect employees' health and to permanently strengthen employability, the motto must be: 'The contractual working time is the actual working time'. There should be incentives to avoid excessively long working times and additional hours. For health reasons, all hours worked in excess of the contractually agreed limit should be compensated for as quickly as possible with time off in lieu. Those shaping working time policy are called on to put this principle into operation and bring actual working times closer to the contractually agreed limits again. Works councils need a lever in order to be able to call for increased staffing levels if the agreed working time is exceeded regularly (→ [WORK ORGANISATION](#)). *Transparency in planning and organising working time* at company level and *dialogue about appropriate working times* are important basic principles for this.

POINT OF CONTROVERSY MORE RIGOROUS RECORDING OF WORKING TIME?

How are the agreed working times to be successfully adhered to if employers refuse responsibility or delegate it to employees – and when it is often employees themselves who, for whatever reasons, fail to record the hours they work?

The Commission vigorously debated proposing a *statutory obligation to record working times*. Supporters see this as a possible way to limit the creeping devaluation of work. Furthermore, the technical means of recording working time are better than they have ever been in the past and in no way amount to the bureaucratisation of work (and hence to a further demand on employees). Technological change has produced sophisticated instruments (e.g. apps) that can effortlessly record the hours actually worked, making them visible to companies and to employees themselves. Naturally, data protection and

codetermination rights will have to be respected in the process. Data deletion routines could be of assistance here; standardised digital systems for use across entire industries, developed with input from the parties to collective bargaining, should also be promoted.

On the other side of the argument, there were doubts that recording working times in the digital age was in the employees' interest. There were said to be particularly strong objections among highly skilled employees to any obligation to document working times. Moreover, recording working times was not the right way to address the entirely justified concern to stop working time from getting out of hand. What was needed instead was a good working time culture in the workplace and realistic staffing levels (→ [WORK ORGANISATION](#)).

As a result of digital change, the question of the number of hours worked has become more topical than ever. If more people are no longer employed by just one company but are working for several clients, then this puts a completely different slant on the whole issue of working time. Although, according to FUCHS et al. (2016), only 8 per cent of workers held multiple jobs in 2016 (with a high degree of underreporting), their employment situation and workloads cannot be ignored, since the costs that arise are borne by society as a whole if the consequences are illness, incapacity for work or the abandonment of any plans to start or expand a family.

Technological progress has made *mobile working* possible in new ways. Workers now have the option of working from home or in completely different places (mobile teleworking). Working from home and other forms of digitally mediated mobile working offer workers – particularly the growing number with long commutes – the possibility of avoiding travel time, thereby contributing to a better work-life balance. Working from home can also mean fewer disturbances than in open-plan offices, for example.

According to the German Institute for Economic Research (DIW), 8 per cent of dependent employees currently mainly or occasionally *work from home*. Because of their job profiles, 58 per cent of employees are excluded from mobile working. Although 61 per cent of employees

who currently do not work from home do not aspire to do so in the future either, one third would like to, at least occasionally. Despite the ongoing debate on mobile working, the share of people working from home has not risen since 2013. Only one third of companies currently offer employees the option of working from home (DIW 2016).

However, according to a report on 'Mobile working/Working without limits' published by the Federal Ministry for Employment and Social Affairs, *employers' expectations of their employees' availability* have increased (BMAS 2015). Only in 16 per cent of cases is working from home actually contractually regulated. The consequence is that 56 per cent of employees who work from home without such regulation work outside the standard agreed working time. Seventy-three per cent receive no compensation for overtime. Employees working from home put in 43.5 hours per week on average, which is longer than provided for in their contracts.

Mobile working enables employees to save time and gain some freedom, but it also has its dark side. *Desk sharing models*, which are linked to working from home and are intended, for example, to save office costs (rent, energy, cleaning) and for that reason do not provide sufficient work space at the company's premises, may have a negative impact on work quality. Not only can an artificial shortage of office work stations lead to people playing a sort of 'musical chairs' around the building or feeling 'homeless' at work but deliberate underequipping of this sort can also trigger feelings of permanent insecurity about one's job.

→ FOOD FOR THOUGHT MAKE MOBILE WORKING POSSIBLE

Experiences to date show there is a need to formalise digital mobile working so that its advantages can be realised and the risks minimised.

- Since mobile working requires a high-trust culture and responsible behaviour on the part of managers and employees, the Commission recommends that *guidelines* should be laid down for the organisation of home working (alternating teleworking: working both from home and at the office) and mobile teleworking.
- The Commission also recommends that a (conditional) legal entitlement to mobile working should be introduced. In principle, all employees should have the right to mobile working, whether from home or elsewhere. It should be *incumbent on the employer to justify a refusal*. Furthermore, the right for individuals to determine the scheduling of their own working time should be strengthened.
- Nobody should be forced to work from home. If mobile working is not required for operational reasons, it should be *voluntary*. It is important that employees should not be putting themselves at a disadvantage if they do not want the option of working from home.
- Working from home requires not only a culture of trust but also *information management*. The integration of colleagues working from home will be an increasingly important part of management's remit in the future. Expectation management is also important. Clear rules are required to determine when home workers may be contacted.
- The time spent on mobile working *must be time on the clock*.
- Mobile working raises *questions of data protection*. There must be guarantees that mobile workers will not be subjected to surveillance.

SUPPORT TIME FOR CARE WORK

At least since the Federal Statistical Office's time budget survey confirmed the economic importance of care work, its *social significance* and *economic value* have been highlighted far and wide. For a long time, it was possible to remunerate this work only indirectly, via the traditional family division of labour and single breadwinner wages. This option, however, has been increasingly weakened. Changing gender roles, the changes in spousal maintenance following divorce and the evolution of earnings have eaten away at the foundations of this model. Consequently, the policy for some years has been to professionalise care work, to expand the infrastructure and increase the opportunities for employees with care responsibilities to take leave.

The *race to make up for lost time* in putting in place an *emancipatory family policy* has been successful to the extent that there are now a number of instruments that can be used to support workers in their responsibilities. The main ones are the parental allowance (Elterngeld) and its extension, the so-called ElterngeldPlus or 'partnership bonus' (intended to make it easier for mothers and fathers to combine child-care and part-time work), care leave and the recent proposal for family leave, in which couples would be given incentives for both partners to reduce their working time, with partial wage compensation.

However, evaluations show that not all these instruments have yet taken full effect or that not all are fulfilling the needs they seek to address (JÜRGENS/FEHR 2016). For example, when a need for elder care arises, employees tend to use their holiday entitlements instead of claiming the statutory leave. The issue seems to be taboo, especially in small and medium-sized enterprises (REUYSS et al. 2014). It is still less common for men to take on elder care work. According to reports from the health insurers, around two thirds of privately provided elder care work is done by women.

→ FOOD FOR THOUGHT A FLEXIBLE TIME BUDGET FOR ELDER CARE

The introduction of the care allowance (for those caring for relatives full time) and of *family care leave* has created options for combining paid work and elder care responsibilities. Nevertheless, take-up remains limited, with men in particular reluctant to make use of these instruments.

This is due, firstly, to the *inadequate level of wage replacement* and, secondly, to the fact that care leave is still *too inflexible*. Caregivers do not usually need a fixed reduction in their working time but rather a number of hours off they can take as and when they need them. As many evaluations now stress, leave granted within the framework of a *time budget* would better meet the needs of both caregivers and those they care for. Thus a budget of 1,000 hours, for example, could be established and then drawn down as required over a longer period of time. Procedures must be put in place that give caregivers as much flexibility as possible but also give employers a certain degree of planning certainty. The introduction of a care leave budget that could be drawn down as required would have the advantage for both employers and employees of making working time reductions (and hence reductions in income as well) or complete withdrawal from the labour market unnecessary.

Despite the various instruments that exist to help workers strike a better balance between paid work and care responsibilities, the reality on the ground is sobering. Many workers unwillingly quit their jobs or have to reduce their hours considerably in order to care for family members (REICHERT 2013). This has serious consequences for their ability to secure their livelihoods and for the development of the German labour force to its full potential. Poverty in old age and a shortage of skilled workers are the adverse side effects that are already making themselves felt.

While demands for improvements to the infrastructure, additional family policy instruments and flexible working times are common-

place, it is less acknowledged that *income* also represents a significant hurdle. Under the current circumstances, many couples have no choice but to adopt the traditional division of labour. Men's incomes are on average higher than women's. Thus *narrowing the gender pay gap* is a fundamental precondition for care leave and a more equitable distribution of it (→ **INCOME**).

→ FOOD FOR THOUGHT A WAGE REPLACEMENT BENEFIT FOR CARE WORK

To be able to do care work, many employees need to see a *reduction in their working time*. However, for many people in the lower income brackets, a reduction in working time is a severe economic blow. For financial reasons, many couples have no alternative to the traditional family division of labour or even two full-time jobs. The Commission considers such a situation to be behind the times. It is neither consistent with the notion of participation nor does it constitute a move towards greater gender equality. Consequently, a drive to implement pay equity is essential (→ **INCOME**). At the same time, however, it is incumbent upon society to support temporary working time reductions for those with care responsibilities, both financially and in terms of working time arrangements. The social partners cannot resolve this issue on their own.

The Commission proposes, therefore, that workers should be granted periods of reduced working time in order to provide care and that they should be paid a *wage replacement benefit* (higher in percentage terms for those with low pay). It is a matter for discussion whether there should be a similar benefit for higher earners as well, albeit one that is lower in percentage terms. One argument in favour is that it is important that people with managerial responsibilities, who can act as role models, should also reduce their working time in order to do care work. Experience with the parental allowance has shown that financial incentives are required for this. If men also reduce their working time and assume responsibility for care work, women will be freed of the burden of family work and will be able to enter the labour market. However, above a certain income level, working time

could easily be reduced without financial compensation. Society as a whole will have to come to an agreement on this issue.

It should be noted that, in certain wage brackets, a benefit that replaces a certain percentage of the previous wage (e.g. 68 per cent as with the parental allowance) would not be sufficient to live on. For these groups, a higher wage replacement benefit will be necessary, so that family-friendly working time models do not remain the preserve of higher earners. The same applies to single parents: the case for higher benefits should be examined for them as well.

TIME, FOR ITS OWN SAKE

The debate on working time usually focuses on the care of children and other family members, but increasingly also on retraining. Little consideration is given to the idea that, over the course of a long working life, it must also be possible simply to stop working just in order to take a fairly long break – without any specific purpose or justification. Granting a period of time out would also benefit employers. It would be more than just a way of expressing appreciation for employees and the efforts they have put in. Employees would have new experiences and return to work refreshed and with renewed motivation. And not least, periods of time out may also be a kind of preventive health measure.

→ FOOD FOR THOUGHT A RIGHT

TO TIME OUT FOR NO SPECIFIC REASON

The Commission recommends that workers should be granted an entitlement to *periods of time out without any specific justification*, during which their employment relationship and social insurance entitlements would remain in place.

The reference point here could be the notion of *sabbatical*, which is available to employees in the public services provided there are no countervailing operational reasons. Employment relationships remain in place during the period of leave. If the sabbatical is taken on the basis of a working time model (e.g. a long-term credit account), then employees basically retain their social insurance cover. In the private sector, such periods of time out are not yet an established element of employees' entitlements. But there are models that can be built on. At the aircraft manufacturer Airbus, a company-wide agreement entitled 'Care for Life' allows employees to take up to one year's leave, with special financial arrangements to support the sabbatical. And a number of pioneering collective bargaining agreements already provide for periods of time out lasting between three and nine months once an initial 'saving up' phase is complete (cf. the collective agreement in the German chemical industry).

Here too, the *lowest income groups* merit special attention. If such periods of leave are not to remain the preserve of higher earners, consideration should be given to introducing longer 'saving up' periods or even wage replacement benefits for these groups. In the case of occupations in which it is demonstrably almost impossible to work until retirement age because of the particular strains, wage replacement benefits could well be justified.

CONVERT PROGRESS INTO TIME OFF

Although proposals for working time reductions usually meet with approval from all concerned as well as from policy makers when the aim is to safeguard jobs, there is a complete reversal when what is proposed is a *linear reduction in working time* for all. While some point to the already widespread shortage of skilled workers induced by demographic change, others simply do not see room for a reduction with full wage compensation. At the same time, however, one of the consequences of the digital transformation is forecast to be enormous productivity increases, even though those forecasts are not yet reflected in economic analyses (HORN et al. 2017) ([→ FRAMEWORK FOR CHANGE](#)).

The debate on a collective working time reduction has stalled not least because workers themselves have been reluctant to campaign for such a reduction. Instead, the focus has been on the *organisation of working time*, i.e. flexibility both day to day and over the course of the working life, from which many workers hope to gain more advantage – particularly since working time reductions often also mean work intensification. However, if care work, retraining and the rest and recovery that is essential in an ever more intense and fast-moving world of work are becoming necessary for everyone – men and women, young and old alike –, should technological progress not also open up room for more free time?

POINT OF CONTROVERSY SHOULD WE VENTURE A STEP TOWARDS A LINEAR REDUCTION IN WORKING TIME?

The question of a *general reduction in working time* in the future was vigorously debated by the Commission. Those opposed to the idea regard such a collective reduction as out of step with the times because working time preferences today are so diverse. Flexible scheduling and distribution of working time and greater time sovereignty are more urgent issues, they argued. Supporters, on the other hand, regard a collective working time reduction as a positive contribution to the quality of life. However important working time flexibility may be, time sovereignty always refers to the volume of paid work as well, it is argued. Consequently, a reduction in working time would also provide a reference point for enforcing a limit on working time and for accommodating workers' interests outside of work. A reduction in the standard working week is necessary, supporters argue, not only in view of the distribution of care work but also because of the potential for automation that digitalisation entails.

At its 2015 national congress, the service workers' trade union ver.di adopted 'short full-time work with full wage compensation and maintenance of staffing levels' as its guiding principle. That objective certainly cannot be achieved without some tough negotiations, but the goal of reduced working time is also seen as a 'positive utopia' to which it is possible to draw ever nearer in a series of 'achievable interim stages'. One such interim stage could be the 35-hour week for all full-time employees, which has already been introduced in some sectors. A linear working time reduction does not have to be conceived as a rigid cut. As Volkswagen demonstrated as far back as 1994, collective agreements can provide for 'breathing' working time models in which the hours worked can fluctuate within certain limits and are managed by means of working time accounts. However, no proposal will meet with acceptance unless the plans for *maintaining staffing levels* are clarified, so that the cut in working time is not accompanied by further work intensification.

POINT OF CONTROVERSY WORKING TIME REDUCTION WITH WAGE COMPENSATION IN THE INTEREST OF MAINTAINING GOOD HEALTH

It is obvious that in some occupations very few people manage to work until they reach retirement age. It was proposed in the Commission that a *working time reduction for particularly onerous occupations* should be introduced. In this regard, it is worth casting a glance towards Sweden. A pilot project in Gothenburg recently attracted a good deal of media attention in connection with working time reductions. At the Svartedalens retirement home, nurses and other care staff worked only six hours a day for two years on full pay. It was hoped that the additional labour costs would be offset by an improvement in employees' job and life satisfaction, better quality of work, improvements in health, reduced number of sick days and productivity gains. The initial results of the evaluation certainly seem to confirm these hopes. Thus, among other things, sickness levels fell and employees reported an improvement in work-life balance.

Other similar projects in Gothenburg show that a model of this kind makes it easier for employers to attract and retain good staff (Toyota plant) and that productivity can increase. At the Sahlgrenska teaching hospital, the number of operations carried has risen while at the same time waiting times have fallen.

The pilot project at the Svartedalens retirement home is controversial among the Swedish trade unions because they were not involved in its design and no collective bargaining agreement was concluded that would have made the experiment permanent. The Commission is open-minded about comparable models provided the trade unions are involved.

WORK ORGANISATION

PEOPLE TAKE CENTRE STAGE



**CONSERVE STRENGTH,
DEVELOP CREATIVITY**



WHERE DO WE STAND?

Work organisation and job content have moved into the spotlight. It is from the motivation and creativity of their employees that companies draw the very potential that is becoming more and more important for *innovative processes and high labour productivity* in the age of digitalisation. Employees in turn are demanding to be recognised as ‘citizens in the workplace’ (MÜCKENBERGER 2015) and for their personal development needs to be taken into account.

PRODUCTIVITY IS DEMANDING. A country’s economic success depends largely on the *capabilities and creativity* of its working population. Germany is known internationally for its high labour productivity, which in recent decades has gone hand in hand with a marked intensification and acceleration of work processes.¹

In their positive evaluation of Germany’s labour productivity or the flexibility of its companies’ work systems, the players in labour policy are often closer to each other than is commonly assumed. From the point of view of labour research, however, the efficiency of Germany’s workers, as reflected in their high level of productivity, is dependent on certain conditions, principally the *motivation, skills and good health of the working population*, which can be guaranteed only if the work is properly adapted to the people who carry it out.

WORK CAN POTENTIALLY WEAR PEOPLE OUT. *Physical afflictions* have been studied extensively. While it is true that many of the risks associated with hazardous substances or unfavourable working conditions have been reduced, others have increased.² The shift towards a world of work based on the processing of information and data brings with it not fewer but different forms of stress and strain.

1 In 2015, each working person worked 1372 hours on average, 0.5 per cent more than in the previous year. In the same year, labour productivity in the German economy rose by 0.9 per cent. This equates to a 0.5 per cent increase in labour productivity per hour worked (STATISTISCHES BUNDESAMT 2016a).

2 Back pain dominates the list of afflictions: 64 per cent of all working women and 40 per cent of all men complain of pain in their backs/necks, usually caused by poor posture (BAUA 2015).

Particular attention has been paid since the beginning of the new millennium to sick days because of *mental exhaustion*. The costs in terms of lost work time and rehabilitation for 2011 were put at 16 billion euros by one of Germany's health insurance companies. The Federal Institute for Occupational Safety and Health assumes that the costs for 2030 will be twice as high. Since the beginning of the debate, there have been repeated expressions of scepticism about whether the causes of mental health problems really do lie in the world of work. However, international comparative studies have established a link. According to these studies, persistent time, performance and competitive pressures, excessively low staffing levels, unachievable targets, a lack of employee discretion and an absence of recognition in the work process³ are regarded as the primary causes of mental overload (VAN DER WEL et al. 2015; DRAGANO et al. 2016).

These are further compounded by interruptions and disruptions caused by the communication technologies, higher expectations of employee availability and problems with the technical infrastructure. Uncertain employment prospects and a lack of promotion opportunities also have a negative effect. The increase in the number of people suffering from mental health problems should not, however, blind us to the fact that the total number of hours' work lost through physical illnesses is still significantly greater than the losses caused by mental health problems,⁴ although a clear distinction between the two is not always possible, since mental disorders can have serious effects on physical health.

Mental and/or physical overload can affect anyone. Workers have different options at their disposal for obtaining satisfactory working conditions for themselves. Anyone who has an exclusive skill, or one that is in short supply, has a good chance, regardless of age, gender or ethnic origin, not only of obtaining a higher income but also of being able to set their own labour standards – and many of those in this category have the skills required for such negotiations (MARMOT et al. 1991; HEAD et al. 2002). For this reason, researchers have high-

3 A job satisfaction crisis can occur if workers permanently run themselves into the ground without their efforts being recognised (positive feedback, salary). Acute stress reactions may result (SIEGRIST 2005).

4 According to the BKK (Federal Association of Company Health Insurance Funds) Health Report for 2015, the share of mental disorders has risen from 2 per cent to 15 per cent over the last 40 years (KNEIPS/PFAFF 2015).

lighted a *social division* that exists *above and beyond the question of income*: the more senior their position within the firm and the more highly qualified employees are, the more likely they are to work in conditions conducive to maintaining good health, providing recognition and opening up space for employee discretion. And yet even employees in formally secure positions frequently experience their situation as stressful if they are subjected to *high performance and competitive pressures*. Employee discretion can become a source of stress overload if the resources for it are not properly allowed for.

On the other hand, in the case of the more easily replaceable unskilled and semi-skilled workers, several negative factors coincide, including job insecurity, low pay, high pressure to work harder, lack of participation and inadequate recognition. Works councils, which could enforce compliance with standards, are few and far between in segments of the labour market structured in this way. If left unchanged, problematic conditions of this kind can lead to *reduced performance* or, eventually, early retirement. In 2015, 16 per cent of those taking their pensions did so on health grounds; one in two of these early retirees were suffering from mental health problems (DEUTSCHE RENTENVERSICHERUNG 2016). *Paralysing effects* are one possible consequence: if people perceive not only the world of work but also their entire existence as unpredictable and fragile, they usually expect little good to happen in the future, adopt a sceptical attitude towards change and the unknown and distance themselves from representative bodies, politics and the state.

THE HEALTH-PROMOTING EFFECT OF WORK IS UNDERESTIMATED. It is only in recent years that studies pointing to the *potential of work design* have attracted increasing attention, even though this is an approach that has a rich tradition in Germany. It started with the research programme on the 'Humanisation of Working Life' (1974–79) and was further developed by its successors. It has been known for a long time that work is more than a means of earning a livelihood and acquiring status. Work creates identity and fosters social affiliation. Consequently, people are able to find meaning in and dedicate themselves to work that to others appears to be monotonous and meaningless. Representative studies have revealed the considerable influence that work content and conditions have on people's *satisfaction*. The young generation in particular links gainful employment to the goal of

self-realisation. They want to ‘enjoy their work’⁵. Overall, for most Germans, work is part of a fulfilling life (DIE ZEIT et al. 2016). Many people hope that technological change will free them from disagreeable tasks and to open up new opportunities for self-development at the same time.

MAINTAINING GOOD HEALTH SHOULD NOT BE LEFT

TO CHANCE. In view of the ageing of society, not only employees but also employers and the wider society have an interest in designing work in such a way that stresses and strains are reduced, the ability to work remains unimpaired and labour is used sustainably. Consequently, many companies that are dependent on specific skills endeavour to maintain their employees’ health over the long term and to make work attractive. The *performance requirements, the behaviour of supervisors and managers, realistic personnel capacity planning and a work environment that encourages creativity* are regarded as the most important factors in promoting good health.

However, these same factors are subjected only to limited review and are only partially governed by rules. In consequence, efforts to keep employees in good health are left to chance and tend to be decided on directly between employees and their supervisors (HEIDEN/JÜRGENS 2013). It is true that the framework is clearly defined by legislation on health and safety at work and working time and by labour law more generally, but many companies are not complying with the law, or have done so only partially (AHLERS 2016).

CREATIVITY NEEDS GOOD WORKING CONDITIONS. Good health and the ability to work, work that has meaning and work that gives pleasure all influence people’s motivation and creativity – and hence their company’s success as well (BADURA/STEINKE 2011; BRYSON et al. 2015). Most employees adapt readily to new situations and can also be motivated under adverse circumstances. On the other hand, if people’s capacity for work and creativity are to be safeguarded over the long term, then certain principles have to be followed: avoidance of persistent overload, realistic work planning; recognition of individuals, protection from discrimination and surveillance, access to training and prospects of career advancement. The positive effects produced by holistic job profiles and transparency in corporate decision-making processes are particularly well substantiated.

5 In job satisfaction surveys conducted among young people, it is true that ‘job security’ is ranked in first place; however, opportunities to bring one’s own ideas to one’s work is ranked next (ALBERT et al. 2015).

WHAT SHOULD WE BE PREPARING FOR?

Digitalisation raises questions about the kind of work organisation that might ensure that companies and employees benefit equally from the innovations. There is broad agreement that work is becoming increasingly complex and that new forms of cooperation are required and made feasible by the advent of digitalisation. Current hierarchies are being called into question; scope for self-determination for both individuals and groups will open up if companies want to achieve greater flexibility and remain or become *capable of innovation*.

Agile organisational structures are on the increase as more and more firms seek to gain competitive advantages from them.⁶ Such structures

⁶ 'Agile' companies are companies that aspire to the highest possible level of flexibility in order to be able to react quickly to changes in society, technology and customer demand. The key precondition for this is the conversion of hierarchical structures into demand-oriented, self-organised project and network structures (ARMUTAT et al. 2016).

⁷ Taking account of diversity and a new voice for the 'corporate citizen' are the key ideas behind this approach (SATTELBERGER et al. 2015).

are also being demanded by employees seeking greater involvement – and who are in a position to make such demands if their particular skills and qualifications mean that alternative employers are not in short supply. There is tremendous potential for employee emancipation here; however, it is debatable whether what is postulated as the 'new understanding of leadership' and the 'democratic company'⁷ has been put into practice already. Critics bemoan the fact that only those decision-making powers that serve to raise performance have been relinquished and regret the absence of a properly safeguarded right to participation. Consequently, the use of the term 'democratic' is misleading, the critics say.

TECHNOLOGICAL DEVELOPMENT CAN RELIEVE PRESSURE AND ENHANCE THE STATUS OF WORK. The new human-machine interactions and more complex task designs are making it possible to improve the quality of work. In the best case, technological change is making learning an integral part of work and further vo-

cational training is becoming an important resource that can contribute to the expansion of opportunities for self-development and self-realisation. Physically strenuous work and monotonous jobs can be reduced. This lifting of burdens will create more scope for the exchange of ideas, increased opportunities for mobile working will reduce commuting time (MASCHKE et al. 2014). The problems typically encountered in trying to reconcile paid work and family life can be addressed proactively if digital technologies are used in everyday family life to support coordination, e.g. for household-related services.

DIGITALISATION CAN ALSO MEAN PRESSURE AND STRESS. Human-machine interactions may also replace previous human-human collaboration, which is likely to challenge workers' occupational ethos, particularly in service work. Cooperation or 'peer learning' may disappear as a result of automation and standardisation. This in turn may lead to a new form of psychological stress caused by technology-induced deskilling and hence to the devaluing of skills and a narrowed scope for human action (PFEIFFER 2016). Overall, work processes will be intensified and accelerated. Performance can be more extensively monitored, personal data can be systematically evaluated and work tasks specified right down to the tiniest steps. In the case of mobile working, it still has to be ascertained how occupational health and safety regulations can be applied and how company agreements are to ensure that health protection standards are observed when companies are no longer a spatial but simply a functional and organisational reference point. As far as crowd workers are concerned, the debate is only just getting under way.

The lack of clarity surrounding digitalisation's potential for rationalisation is creating anxiety about job losses. The more own judges his or her skills to be replaceable, the more likely skipping rest periods and exhaustion become, which in turn has a negative effect on health (SIEGRIST 2015). Already today, individuals are left too much to their own devices as they try to cope with changing work requirements and conditions.

IT IS NOT TECHNOLOGY BUT WORK ORGANISATION THAT MATTERS MOST. For all the allusions to the opportunities and risks of technological progress, we have to realise that it is not the technology itself but rather the way it is used by people that gives rise to certain effects. Thus the decisive factors are the objectives being pursued through

technological progress and the degree of autonomy employees are granted in meeting those objectives. As is well known, these questions are linked to opposing interests. Furthermore, it is striking that many of the options cannot yet be used because the digital technologies are not sufficiently widely diffused. The Internet, e-mails and smart phones are ubiquitous, but the use of smart digital technologies in private households and the workplace is still in its infancy. In other words: the process can still be shaped.

GERMAN PARTICULARITIES. One German particularity is the high share of skilled workers. This makes it easier to put in place decentralised forms of work organisation, in contrast, for example, to the production systems typically found in the English-speaking countries with their polarisation between semi-skilled and highly skilled workers. Germany is confronted simultaneously by two other phenomena that have a very direct effect on work organisation: *demographic change* and the *issue of reconciling work and family*, which has not yet been fully resolved. The ageing of the population will cause the number of days lost to sickness to rise in the foreseeable future. Older workers do not suffer more illness but do need longer recovery times before they are fit to return to work.⁸

⁸ According to the 2016 report on sickness absence by AOK, one large German health insurance company, 45 per cent of all days lost to sickness are attributed to long-term illnesses, i.e. absences lasting more than 42 days. The duration of illnesses rises with age (BADURA et al. 2016)

WHERE CAN WE BEGIN?

In an economy that depends on innovation and high productivity, the demands being made of companies' approaches to work organisation are becoming increasingly tough. Solutions must be found in order to prepare for dynamic, globalised markets, an increasingly complex, networked economy and changes in consumption patterns. Technological progress is increasing the pace of work. In these circumstances, organisations and those working in them face new challenges every day. They have to devise flexible work structures but in doing so cannot disregard creativity and the prerequisites for creative working. Working conditions that not only avoid physical wear and tear and mental exhaustion but also open up space for employees to exercise discretion and to experience self-efficacy are now recognised as prerequisites for economic success and strength in innovation. The task now is to draw the right conclusions from this.

PLAN HUMAN RESOURCES REALISTICALLY

Staffing levels are directly related to phenomena such as psychological and physical overload and pressure that poses a risk to health. Researchers have long criticised excessive time and performance pressures, attributing them to the fact that staffing levels are often calculated too tightly. Even just a normal level of sickness often creates a need for overtime and work intensification. If individuals or even several employees at a time want to reduce their working time, cut back on overtime or take time out, then conflicts are inevitable. Often in such situations, the actual structural problem of inadequate staffing levels is construed – by supervisors, in teams or even by those

affected themselves – as a problem caused by employees. As a result, important concerns such as work/life balance, retraining or maintaining good health are disregarded. Thus personnel planning starts to clash with objectives that are also beneficial to the company, such as maintaining efficiency, high work motivation and low levels of conflict within work teams.

Works councils regard *staffing levels* commensurate with the actual volume of work required as the most pressing issue they have to deal with (74 per cent), followed by restricting work intensity (70 per cent) (AHLERS 2016b). At the same time, there is a major discrepancy between the importance of the issue and the role it plays in workplace negotiations.

FOOD FOR THOUGHT COLLECTIVE AGREEMENTS ON STAFFING LEVELS

The calculation of staffing levels should become subject to collective bargaining. This does not mean meticulously calculating time units for individual processes but rather stipulating *rights to (long-term) workforce planning procedures in collective agreements*. In addition, mechanisms should be established for how to proceed in the event of employee overload and staff shortages.

The collective bargaining agreement on 'Occupational health and demography' concluded in April 2016 by ver.di, the German services trade union, and the management of the Charité hospital in Berlin, could serve as a model. This agreement was preceded by a court decision on the question of the relationship between entrepreneurial freedom and the *health of the workforce as a good to be protected*. The fact that the court came down on the side of employees' health is, in the Commission's view, ground-breaking.

The collective agreement defines overload indicators, such as a department's critical age structure, inadequate departmental, divisional or ward management, the volume of overtime worked and the number of hazardous incident reports and complaints. In the case of nursing services and off-ward functional units, *minimum standards for staffing levels* were specified that were linked to *rules of procedure*. They set

out how to proceed in the event of a divergence from the minimum staffing levels, e.g. by deploying additional staff, reducing services or suspending ward admissions. In order to monitor implementation of the collective agreement, a *joint management-union committee* with equal representation of both sides has been set up that receives all the information required for evaluation, as do all employees. In order to prevent any possible deadlocks in the health committee, an internal mediation service chaired by an independent third party (ombuds-person) has also been set up. A *fund* has been established to finance the additional staff required.

Initial experiences show that the collective agreement has brought greater *transparency* to workforce planning. The discrepancy between the agreed standards and the status quo has become visible. It is now easier to justify and implement the recruitment of new staff. At the same time, however, it is becoming clear that the collective agreement requires further development if it is to deal with acute overloads effectively. So far, according to ver.di's initial assessment, the collective agreement has been circumvented to some extent (NEHRLICH 2017).

MANAGE THE WORKFORCE SUSTAINABLY

Occupational health and safety is under pressure from two sides. On the one hand, statutory regulations and those agreed on in collective bargaining agreements are not necessarily applied in practice. On the other hand, many forms of work have changed so much (e.g. following the introduction of *result-oriented performance management*) that health and safety regulations often no longer have any effect.

In recent years, many commercial offerings have become available that help individuals to not lose sight of the need to protect their health while at the same time remaining highly productive. Self-help books, coaching and continuing education/training can all help people to become more *attentive to their own needs* (→ **EDUCATION AND TRAINING**). However, if responsibility for health maintenance is left

entirely to the individual, success is hardly guaranteed. In the absence of *rights, entitlements and working conditions that are amenable to planning*, even the best attempts at self-management will come to nothing.

Thus the question of how employees can be enabled to play an active part in protecting their own health is becoming ever more pressing. Of at least equal importance is the question of how to motivate *employers* to manage their employees responsibly and sustainably. Health maintenance turns out to be a task to be shared by employers and employees.

Instruments for health maintenance exist in both legislation and company agreements. *Risk assessments* play a special role. They are regulated by law and are intended to help identify and assess risks and document the results of occupational health and safety measures. Employers can conduct these risk assessments themselves or delegate them, but the responsibility remains with them. To date, however, this instrument, which is intended to ensure compliance with standards, has been used in only half of all companies. And only half of those companies also take into account mental strains, which have increased sharply in recent years.

Health management in the workplace is intended, as a holistic concept, to ensure that employees' health and capacity for work are maintained. It is regarded as a key factor in achieving high productivity and developing the capacity for innovation. However, it has not been implemented in all sectors of the economy. While workplace health promotion has become standard for the core workforce in medium-sized and large companies, employees outside the core workforce are excluded, as are many workers in small and medium-sized enterprises exposed to stiff competition that regard workplace health management as a 'luxury' they cannot afford.

→ FOOD FOR THOUGHT MAKE RISK ASSESSMENTS EFFECTIVE

The purpose of risk assessments is to minimise workloads and the resultant stresses that may be injurious to health by means of a participatory and process-based approach. They act as a *workload monitor* and workplace *early warning system*. In recent years, however, there has been no progress in developing this very important instrument further. In view of the digitalisation of the world of work, such risk assessments are becoming ever more crucial, albeit more complex. The Commission makes the following proposals.

— *Strengthen monitoring and inspections:* The risk assessments stipulated in law have not been satisfactorily implemented. If higher implementation rates are not achieved, tougher monitoring arrangements should be put in place. However, this will help only if small and medium-sized enterprises receive more support and if those that persistently fail to fulfil their obligations are sanctioned.

— *Specify standards and develop models:* Since psychological and physical stress can take many different forms, is dependent on the situation and cannot be described and quantified on the basis of a single set of guidelines, standards should be laid down for each industry and/or job. Tailored models can then be developed on the basis of a yet to be developed ‘risk map’. By way of examples, we can point to the industry-specific models developed in Denmark, which take account of psycho-social stresses, or the preparatory studies carried out in Germany that have sought to define work-related stress as part of the debate on a proposed ‘anti-stress act’.

— *Ensure participation:* Good risk assessments stand out by virtue of the fact that *employees are directly involved*. In order for this employee participation to result in lasting improvements in health outcomes, not only do differentiated workforce surveys have to be carried out but the results also have to be made accessible. Management and works councils should be made aware of this and trained to moderate the corresponding processes. Employees should also have access to advice in the workplace in order to be able to consult experts in occupational health and track down the causes of their problems.

— *Alliances inside and outside the workplace:* In order to develop risk assessments further, it would be possible to tap into the collabo-

rative ventures already institutionalised in the area of occupational health and safety, such as the National Occupational Safety and Health Conference and the National Prevention Conference. Agreement should be reached on adapting the risk assessment instrument to the specific conditions in individual sectors and industries so as to take account of digitalisation and the new forms of pressure and stress.

— *Expand advisory services:* Many specialists in the workplace feel themselves to be inadequately trained in identifying and preventing psycho-social risks and cite this as the main reason for failing to take account of mental stress in risk assessments. It is true that there are extensive guidelines and codes of practices available from the relevant official bodies and trade unions (the ‘Mental Health in the World of Work’ project conducted by the New Quality of Work Initiative and the Federal Institute for Occupational Safety and Health), but these should be supplemented by expanding the advisory services available to specialists in the workplace. It is also conceivable to design a platform that could be used to provide assistance at short notice.

— *Risk assessments with consequences:* It is frequently the case that health hazards are noted in risk assessments without any changes in work organisation (or changes whose effectiveness is not monitored). For employees, such risk assessments are disillusioning and reinforce the feeling that their overload and stress are being disregarded. In order for the instrument to not lose legitimacy in the eyes of employees, risk assessments must be followed by specific measures to improve everyday work routines. Monitoring with a review after a fixed period of time would be helpful, for example.

— *Bonus-malus system:* The Commission would also argue in favour of introducing more *incentives for employers* to carry out risk assessments. Further investigations should be carried out in order to ascertain whether bonus payments from the health insurers or reductions in health insurance contributions might offer a solution. The risk of deadweight effects should be taken into account. Instead of a bonus, a ‘malus’ (i.e. a negative bonus) would also be conceivable. One possible place to start would be sick pay. Employers have to continue paying the salaries of employees who fall ill for six weeks; after that, it is the health insurance fund that takes over. It would be conceivable to extend the six-week period for firms that do not carry out risk assessments.

Election of health and safety representatives: One positive move would be to give employees the opportunity to elect health and safety representatives, as is already the case in Australia and New Zealand, for example. In Germany, this function is usually performed by works councils. However, if there is no works council, companies could be requested to have their employees elect health and safety representatives, who would have to be given the appropriate rights and resources. In this way, employee participation could be increased – as could the motivation of company management or HR departments to take the necessary measures following risk assessments. The election of health and safety representatives could also be the mainspring for the subsequent establishment of a works council. The question is how companies might be nudged to allow the workforce to elect health and safety representatives. A statutory requirement could be examined as an option.

In the Commission's view, there is an urgent need to clarify the question of how employees outside the core workforce (contract workers, platform/crowd workers) can be included in the drive for health maintenance. A possible solution might lie in the proposed extension of the concept of employee to groups that are not directly employed by a company but are dependent on it (→ PARTICIPATING IN THE WORLD OF WORK).

People regard gainful employment as more than just a means of earning their livelihood. Given the time devoted to it and its effectiveness as a means of social integration, work is also a medium for self-realisation. Workers use their occupations, their jobs and the results of their efforts to bolster their *identity*. While many jobs offer a number of opportunities for self-realisation, others offer very few. At the same time, people's ambitions and needs differ. Some want to be free to exercise discretion and take responsibility for the results of their work as part of a self-managed process, while others prefer to work within structures laid down by their managers and supervisors in which roles and responsibilities are clearly defined and delimited. This diversity

has to be tolerated to accommodate people's different needs and capabilities and because the employment system, with its wide range of jobs and tasks, depends on the differences in people's expectations of their work and preferences as to how it should be organised.

A *good match of employees and their tasks* ensures that employees are neither overtaxed nor underchallenged. Well-trained managers, professional human resources development, a framework for further training and appropriate personnel selection all help achieve this aim. *Participation* is important, too. By involving employees in planning and shaping current and future responsibilities, companies ensure that skills, employee needs and desired outcomes mesh with each other.

FOOD FOR THOUGHT DO NOT FORGET THE ACTUAL WORK TASKS

However necessary comprehensive health maintenance measures and a focus on working conditions may be, we should not lose sight of *job content*. The matching of work tasks and worker is no trivial matter – and is the very goal of the humanisation of work. As they go about their daily tasks, and even in adverse conditions and over the course of a long working life, workers have to succeed in interpreting their work as meaningful again and again, in one way or another. This ability generally goes largely unremarked in performance evaluations, even though it is crucial to sustained effort in the workplace.

Consequently, work tasks should be varied and conducive to learning – this was indeed a basic objective of the groundbreaking Programme on the Humanisation of the World of Work (1974–1989). There are a number of expert reports by occupational health researchers that define job profiles for individual industries and occupations that particularly meet human requirements. The digital transformation will create opportunities for improvement because the number of monotonous and alienating jobs may well decline. At the same time, however, new risks will emerge because algorithms and machines will also take over those parts of jobs that people find meaningful, without other tasks taking their place. Thus the challenge is to *develop new task profiles jointly with workers*.

Since 2004, employers have been obliged to provide a workplace re-integration programme for all employees who within any one year have been unfit for work for longer than a total of six weeks. This means that the employer, with the involvement of the works council, has to explain how the incapacity for work might possibly be overcome and what assistance might be provided in order to prevent repeat occurrences so that the employee can keep his or her job. In view of the ageing of the workforce, foreseeable shortages of skilled workers and new forms of stress caused by digitalisation, this instrument will become increasingly important. To date, it has been used mainly to reintegrate employees following general illness, but the integration of people with permanent health problems is also becoming increasingly important. Increases are also being seen in the number of workers taking longer periods off work because of particular occupational pressures and stress and who are returning to work with the help of workplace reintegration programmes.

Besides those affected, *many actors* with specific knowledge and responsibilities are also involved in these reintegration programmes. They include HR and line managers, occupational physicians, representatives of the severely handicapped and immediate colleagues. The actors in the social security system also play a role. They include mutual insurance associations, health insurers, pension schemes and integration offices, which seek to improve the labour market participation of people with severe disabilities. There are instances of exemplary interface management in large companies. Many smaller companies, on the other hand, clearly suffer from a lack of information and training. To date, only about 50 per cent of companies have introduced workplace reintegration programmes (RICHTER/GELS 2017).

→ FOOD FOR THOUGHT EXPAND REINTEGRATION PROGRAMMES

The reintegration of employees following a period of illness and the integration of people with limited capability for work are not only advisable in order to fill gaps in the labour supply but also because they are consistent with the basic principle of a society in which livelihoods, participation and social integration are all secured through gainful employment. This instrument should be more widely used and small and medium-sized enterprises in particular should be advised on how to implement it.

Currently, there seem to be two areas where obstacles to successful reintegration still exist. Firstly, doctors are hardly in a position to assess precisely the pressures patients will face on returning to their jobs because they lack information on the job and work situation in question. The Commission recommends that medical specialists be encouraged to take greater cognisance of the findings of research on the work environment. Secondly, there is obviously still a lack of standards and obligations relating to the reintegration process. Responsibilities and procedures are not clearly defined but left up to companies. The Commission regards it as necessary to develop standard procedures, following the Dutch model for example, in which there are clear schedules for reintegration with fixed 'milestones'.

One unresolved question is that of companies not subject to dismissal protection (i.e. those with fewer than ten employees). There is a risk that employers will simply dismiss employees who go sick or are suffering from reduced capabilities in order to avoid having to implement a reintegration programme. Consideration could be given to the idea of declaring the dismissal of employees on long-term sick leave legally void if a reintegration programme had not been completed beforehand.

A suitable infrastructure of permanent, readily accessible contact partners for reintegration programmes would help to avoid delays in getting activities under way. While the organisations that make up the social security system are highly specialised in their own areas of expertise, their organising principle is frequently administrative in nature rather than being concerned primarily with work and the persons in need of reintegration. The Commission therefore recommends

that alliances for *maintaining employability* be strengthened. These alliances will be all the more sustainable the more closely statutory requirements, collective bargaining agreements and agreements on the company level relate to each other.

PROTECT WORKERS' DATA

Against the background of the increasingly dense digital networking of people, machines and things, many opportunities have arisen for not only recording personal data but also using it and exploiting it as a basis for constructing business models. Thus there are many issues to be tackled. They range from determining the actual meaning of the 'right to informational self-determination', as proclaimed by the highest German court in 1983 (BUNDESVERFASSUNGSGERICHT 1983), to the questions of who may use what data and when personal rights are being infringed. *Performance and behaviour monitoring* is made considerably easier by digitalisation. Cloud technologies and internal crowd sourcing open up new opportunities to make work comparable, assessable and scalable; internal and external rankings ('digital reputation') increase performance and competitive pressures.

A true *business optimisation market* has developed that offers companies new ways of monitoring, managing or even recruiting employees by means of algorithms. The products available in the market often end up being deployed in the workplace in the guise of health promotion aids. However, the uses to which the tracking of employees' vital signs by wearables is put usually remain undisclosed. The effect: people who know they are being observed and measured adjust their behaviour – often unconsciously – to what they anticipate the employer's expectations to be (TURKLE 2015).

In general terms, the new human-machine interactions give rise to some serious data protection issues when employees' *personal data* accumulates as a by-product or is used – also to humanise working conditions. Worker assistance systems, such as head-mounted displays

or sensor gloves, gather data from employees as well. In logistics, for example, itineraries are optimised by GPS tracking systems. The reason behind the use of data for analytical purposes is to *increase the efficiency of planning, production and utilisation processes*. There are reports on companies that fit employees with RFID chips in order to monitor their activities and sanction misconduct. In general terms, *conflicts of objectives* are emerging between digitally assisted control, on the one hand, and employee data protection concerns, on the other. Some workers are already beginning to experience feelings of subjection and helplessness. Moreover, by no means all employees are prepared to manage their own data.

FOOD FOR THOUGHT STRENGTHEN EMPLOYEE DATA PROTECTION

Informational self-determination, data protection and data security are basic prerequisites for a successful digital transformation of the world of work. If these are not guaranteed, employees will hardly accept this change and be receptive to the new technologies. The Commission recommends, therefore, that employee data protection should be strengthened. Employees' dependency in employment relationships that are structurally unbalanced makes it necessary to put in place specific regulations to protect employees when their personal data are being processed. A starting point would be to *transpose the European General Data Protection Regulation into German legislation* quickly, in the form of a separate employee data protection act.

To date, works councils have had only derived rights in respect of data protection. They stem from the existing right of codetermination covering the introduction and use of monitoring and surveillance devices, as detailed in the Works Constitution Act. If data protection issues arise, then the works council is responsible for dealing with them. Beyond that, it has no powers to take action on informational self-determination or the protection of personal data. In view of the digitalisation of work processes, however, this is fast becoming a pertinent issue. One fundamental problem is that, in the event of a dispute, employees have to invoke their rights individually and call for

their employer to act in accordance with the law in handling their personal data and then ensure that they actually do so. If an employer does not fulfil legal obligations with regard deletion of personal data, for example, then the employee's only recourse, besides involving the workplace data protection representative or the relevant state regulatory authority, is to take the case to the labour court. The Commission recommends, therefore, that consideration be given to the introduction of an *explicit right of codetermination for works councils with regard to data protection*.

DESIGNING AGILE WORK ORGANISATION STRUCTURES TOGETHER

The digitalisation of the world of work and of business processes is resulting in a quickening of the pace of work, procurement and sales processes and the extensive integration of processes along the value chain. In many areas, however, it also requires a fundamental *change in organisational structures*. The buzzword is 'agile company'. The notion underlying this term is that companies (or at least certain departments or divisions of companies) are confronted with an accelerating pace of change and consequently are forced to modify or completely redesign work tasks, responsibilities and management and communications structures.

However, radical structural change brings the risk that all involved will lose track of things when job contents are defined for ever shorter periods, organisational charts become increasingly fluid and collaborative structures become more complex. The less clearly defined the objectives and outcomes of work processes are, the more important *shared learning processes* will become in the workplace, from managers, supervisors and department heads to works councils and ordinary employees. These shared learning processes are a prerequisite for the much-trumpeted 'agility'. If they are to be successful, they must be based on trust, cooperation and participation. Organisational change cannot be instituted top-down but must make use of employ-

ees' knowledge and experience. Transparency, open communications and codetermination are crucial for organisational change – and the basis of a *democratic world of work*.

FOOD FOR THOUGHT TRANSPARENCY AND COOPERATION IN ORGANISATIONAL CHANGE

In the Commission's view, *codetermination* and *'agile' organisational structures* are not mutually exclusive; on the contrary, the interplay between them is a guarantee of success. If they have resources and rights, works councils can make a very significant contribution to rebuilding organisational structures. Their work can create the conditions for ensuring that the workforce remains highly committed throughout the process of change and can also bring the workforce's expertise to bear on the process.

Codetermination on work organisation issues was demanded when the Works Constitution Act was amended in 1972, but was granted only in certain areas (surveillance, ergonomics). The digital revolution and the current debate on the 'democratic company' have given this demand renewed significance. There is a debate to be had on what rights of codetermination pertaining to work organisation (rights to information, to launch initiatives or to participate in decision-making) are appropriate in the digital age. In order to meet the need for participation, the right of codetermination must be formulated in such a way that it does not replace the self-determination rights of employees and groups but rather supports, channels and coordinates them.

There have already been some moves in this direction. In 2002, when the Works Constitution Act was amended once again, a regulation was introduced that offers works council the possibility of having certain matters pertaining to work organisation managed by working groups on their own. In practice this option is not used much and should be given a new lease of life.

The more thoroughgoing the organisational restructuring turns out to be, the more probable it is that the prevailing standards will have to be transferred to the new structures. Consequently, disputes between employers and employees or between supervisors and em-

ployees, which may also raise *issues pertaining to labour law*, are likely. The acceptance and sustainability of the organisational change will depend to a very large extent on how far both sides are able to assert their interests in this process.

The ‘*Work of the Future*’ laboratory set up by Bosch is an example of how the balancing act between (technological and organisational) disruption and social stability might be managed. The laboratory functions as an internal start-up under the oversight of the works council. Its purpose is to develop networked and ‘agile’ forms of organising knowledge work. The laboratory is an experimental space, organised with the participation of the social partners, with no predetermined outcomes, conceived as a shared learning process. The Commission suggests that such laboratories should be introduced more widely and that the knowledge and insights gained from them should be made available to the social partners and to companies.

MAKE GOOD LEADERSHIP THE STANDARD

Employers tread a path between two principles: on the one hand, to make their companies successful as measured by the criteria of business economics (by using resources in a cost-effective way that is flexibly adapted to market conditions) and, on the other, to manage their workforce in a sustainable way that takes account of occupational health and safety, employees’ demands for self-realisation and their working-time preferences. These objectives can be reconciled, but only if there is a commitment to do so when jobs are being designed.

A key role in this falls to *management*. It is largely management’s understanding, behaviour and actions that determine how corporate objectives are implemented and thus what their effects are. Middle management is not in an easy position: sandwiched between the objectives of senior management and the interests of the workforce, they have to deal with changes in their own and others’ expectations of their role. At the same time, managers have acquired many new

responsibilities, as have works councils. These new responsibilities are a product not solely of globalised economic relations and our digitalised and networked working and living environments but also of demographic change and the increase in employees' mental health problems. The new responsibilities have come on top of the existing ones, in many cases without any relief elsewhere. It is hardly surprising that cases of burn-out and use of performance-enhancing substances are higher among management than among non-management staff (BADURA et al. 2011).

→ FOOD FOR THOUGHT INCENTIVE SYSTEMS FOR GOOD HUMAN RESOURCE DEVELOPMENT

Only employers who recognise the importance of human resource development in the management of structural change will be able to maintain a lasting presence in the market. *Middle management* has a key role to play in this. The Commission proposes that middle management's role be addressed in two ways.

— Firstly, managerial employees *must be enabled* to deal with the current challenges. For that, they require information and transparency concerning developments within the company and senior management's objectives. However, they also need new competences. When companies go through a period of restructuring in order to react to change, management's role also changes: management's activities, duties and responsibilities change, as does the management philosophy. Consequently, human resource development cannot be confined to the non-managerial workforce but must begin with managerial employees themselves. They need training and coaching, as well as spaces for reflection and exchange with colleagues (BORGGRÄFE 2017). This also means that they need time.

— Secondly, managers should be given *clear incentives* to concern themselves with the development of the workforce. Measurable criteria for human resource development should be laid down in *target agreements* for managerial staff. For example, managers could be obliged to draw up an individual development plan for each employee, which would then be checked by the human resources department.

Consideration could also be given to introducing regular assessments of supervisors by their supervisees as well as performance evaluation systems for managerial employees that would take account, among other things, of the efforts made to safeguard employees' health. Nevertheless, care should be taken with all these proposals to ensure that middle managers are not ground down between these additional demands on their time and the unachievable performance targets set by senior management.

POINT OF CONTROVERSY CRITERIA FOR MEASURING 'GOOD MANAGEMENT'

The question of how good management could be made 'measurable' was also discussed in the Commission. One starting point could be the development of an *index for 'good management'*. Existing research on management behaviour could be used in compiling this index and new data could also be collected. Given the rich body of knowledge already assembled by labour researchers, there are many indications available as to how to compile such an index. In defining the criteria, it is important to take into account the *differences between companies*. Whereas large companies can often initiate the process of developing an overall management concept easily, this is in frequently much more difficult in small and medium-sized enterprises for lack of the necessary personnel resources – and in any case would only lead to further work intensification for managerial employees.

The Commission vigorously debated the question of whether there would have to be legal incentives and/or obligations for good management. For example, a *legal obligation* could be placed on supervisory bodies to monitor 'good management'. In this way, companies would be forced actively to address the issue because the reporting on it would have to be included in their *annual reports*, for example, which are also published for an outside audience.

MIGRATION

COMMITMENT TO DIVERSITY



END DISCRIMINATION, SMOOTH THE PATH INTO TRAINING AND WORK



WHERE DO WE STAND?

Migration is nothing new for Germany. Germans have always emigrated to other countries. Since the beginning of the new millennium, the trend has been upwards: in 2015, the Federal Statistical Office recorded almost a million people leaving the country. At the same time, the country has always taken in people from other regions. Immigration reached its peak after the Second World War, with the arrival of millions of people of German descent driven out of their homelands, and then again in 1992, when around 1.5 million people fled to Germany, most of them fleeing the war in the former Yugoslavia. After the asylum rules were tightened, it was not until the war in Syria that migration to Germany reached comparable levels.

People come to Germany from a wide diversity of regions and cultures – and for very different reasons. Apart from the period when the flight from Syria reached its peak in 2015 and 2016 (BAMF 2015, 2016a), most of those coming to Germany are not asylum seekers but economic migrants. This is to a large extent due to the situation in the German labour market. When the Federal Republic was in its infancy and experiencing labour shortages, there was a drive to recruit workers from the Mediterranean countries. Even today, many sectors of the economy could hardly keep going without migrant labour. This situation will be further exacerbated as the population ages.

IMMIGRATION IS UNSETTLING GERMAN SOCIETY. More than 17 million people with an immigrant background¹ are currently living in Germany – that's 21 per cent of the population. Three quarters of the 11.5 million first-generation migrants have already been living in Germany for more than ten years. A total of 5.6 million people have been born in Germany to immigrant parents. Thus multiculturalism has been shaping German society for a long time. However,

¹ According to the STATISTISCHES BUNDESAMT (2017a) a 'person (has) an immigrant background if they themselves or at least one of their parents has German citizenship that was not obtained by birth'.

since the autumn of 2015, the number of refugees arriving in Germany has increased massively², considerably intensifying the debate on immigration and fuelling heated exchanges between the political parties and between colleagues in the workplace, within families and within neighbourhoods.

The war in Syria has presented Germany with enormous challenges.³ While there was and still is much willingness to help, the general questions of how to deal with refugees and how many the country can absorb remain contentious. Supporters of Angela Merkel's stance on refugees emphasise Germany's humanitarian responsibility and highlight the positive impact on the labour market and the stabilising effect on the pension of an influx of younger people. Critics, on the other hand, argue that Germany society has already reached the limits of its capacity to absorb large numbers of refugees. The question of what degree of heterogeneity threatens a solidarity that already appears unstable because of increasing inequality is up for debate.

The current disputes are not concerned solely with how to deal with refugees. The underlying debate is about immigration in general and, above all, the (desired) degree of multiculturalism. In the course of this debate, second and third-generation immigrants have suddenly found themselves facing increased stigmatisation and marginalisation. This is another expression of the intense debate around identity: what does 'being German' mean today? This question can be answered only through a (contentious) process of mutual accommodation.

HIGH HURDLES BLOCKING ACCESS TO TRAINING AND EMPLOYMENT.

In the dispute around the scale of immigration, references are often made to the *absorptive capacity of the labour market* and to the related issue of the new arrivals' preparedness for the labour market. Data is now available on this. While children usually learn German very quickly as a result of attending school, thus preparing themselves well for their future education and training, the skills of the teenagers and adults are decidedly mixed.⁴

There are currently around 150,000 jobs available in Germany for people with poor language skills and/or no formal qualifications.⁵ Thus training is the key to labour market integration. In the

2 According to the UN Refugee Agency, around 65 million people across the world have been displaced because of war, expulsion and persecution.

3 In 2016, asylum was granted to 400,000 adult refugees. The number is expected to be 180,000 in 2017 (BA 2017C).

4 The IAB-BAMF-SOEP survey records refugees' skills and provides information on skill distribution and potential (BRÜCKER et al. 2016).

5 These jobs attract not only immigrants with poor language skills but also many Germans without school-leaving qualifications (WEBER 2016).

refugees' countries of origin, there is nothing comparable to the German vocational training system, so it is hardly surprising that only a small proportion of them have certified vocational training qualifications, although they have high educational aspirations in general. Since language is acquired through social contact, the world of work would be an ideal place to learn; however, refugees often lack the basic knowledge of German required to take advantage of this. As a result, and despite a great deal of goodwill on the part of firms, access often remains blocked. This gives rise to a *vicious circle* of inadequate language skills and insufficient training that prevents integration into the labour market.

Migration researchers are critical of the fact that many support instruments are designed as discrete measures rather than offering a *long-term, comprehensive support structure* and providing information on the many possible training opportunities and career paths (through coaches, for example). In many cases, they argue, neither advisors nor the individuals concerned consider vocational training because it does not immediately translate into income. Many refugees are also said to be unaware of the existence of a dual vocational training system in Germany and of the possibilities it offers. As a consequence, human potential is being wasted.

UNFINISHED BUSINESS. In the midst of all the heated debates about the admission of refugees, those migrants who have been living in Germany for a while or their second- and third-generation descendants seem to have been lost to view. True, the 2005 Immigration Act made it easier for foreign skilled workers to come to Germany. It was the first piece of German legislation to include provisions to foster the integration of legal immigrants. In 2006, the 'Federal Government's First National Integration Plan' was adopted, the 2012 Recognition Act made it easier for migrants with vocational qualifications to find work matching their qualifications.⁶ Nevertheless, people with an immigrant background still tend to be considerably less well integrated into the German labour market than those without.

They are more likely to be in precarious employment and they have not benefited from the recent improvement in the labour market situation to the same extent as people without an immigrant background (HÖHNE/SCHULZE-BUSCHOFF 2015).

⁶ The legislation aims to improve the assessment and recognition of vocational qualifications acquired abroad.

UNEQUAL OPPORTUNITIES IN THE EDUCATION SYSTEM. Germany is still one of the countries in which the differences in educational attainment between young people with an immigrant background and their peers without one are greatest. The distance between these two groups did not narrow significantly between 2006 and 2015. The influence of immigrant children's socio-economic background – i.e. their parents' educational background and occupational status – on their educational attainment has declined somewhat but still persists (LOKHANDE/NIESELT 2016; AUTORENGRUPPE BILDUNGSBERICHTER-STATTUNG 2016).

Deficient language skills and a lack of parental resources (familiarity with the German school system, help with homework, money for tutoring, sport and music lessons) are still not always counterbalanced by state support. Immigrant parents are often unable to fathom how to apply for financial support and also lack the language skills to do so. Discrimination at school, for example in the awarding of grades and recommendations for transfer to secondary school, prejudice and underestimation of the potential of children from certain backgrounds have still not been eliminated. Consequently, the share of second-generation immigrants aged between 18 and 35 without school-leaving qualifications, at 4 per cent, is twice as high as in the German-born population of the same age; similarly, the share of those with only lower secondary school certificates is also considerably higher (23 per cent compared with 15 per cent) (STATISTISCHES BUNDESAMT 2017a).

THE FULL POTENTIAL OF WOMEN WITH AN IMMIGRANT BACKGROUND IS NOT BEING TAPPED. The labour market participation rate for women with an immigrant background was 60 per cent in 2011, 13 percentage points below that for women without such a background (BAMF 2011). It is particularly low among women from non-EU countries. The reasons include cultural factors (traditional role models), a lack of support networks for childcare and discrimination on part of the employers (ANTIDISKRIMINIERUNGSSTELLE DES BUNDES 2013). Many immigrant women were severely disadvantaged in their home countries in terms of access to education, which explains why a high share of them has few if any qualifications.

CROSS-BORDER ECONOMIC MIGRATION IS ON THE INCREASE. Economic globalisation, the widening disparities in living standards both within and outside the EU and the European Single Market on the

free movement of labour are the factors driving another form of migration known as *circular* or *repeat migration*. This is the repeated movement of migrant workers between home and host countries. More than ten per cent of the foreigners from non-EU member states living in Germany can be regarded as circular migrants (BAMF 2011).

These transnational migrants divide their lives between two countries. *Transnational labour mobility* mainly follows demand in the host countries, a fact that is largely neglected by observers. In Germany, it is mainly employers in agriculture, catering, meat processing and the care sector that recruit people from abroad.⁷ Most of this migration into the labour market takes place not on an individual basis but through '*postings*'. Many of these migrants have significantly higher qualifications than are required in the areas in which they are employed; nevertheless, they are paid more than they would be in their home countries (WAGNER 2015). However, they are in a worse position than their counterparts born in the host country. Although they are paid according to the 'location principle', their social security contributions and entitlements are determined by the regulations in the posting company's home country.

7 The federal government recruits care workers but accords only limited recognition to their qualifications, so they are usually put on a lower pay scale and (unintentionally) become cheap competition.

WHAT SHOULD WE BE PREPARING FOR?

Driven by the rise of right-wing populism, governments and political parties, as well as the social partners, will have to position themselves more clearly and determine how they stand on migration and immigration. While some stress that the argument that skilled workers are in short supply is rather hackneyed and that in many sectors there is no need to recruit workers from abroad, others point to demographic change and the gap that the retirement of those born in the period of high birth rates (1955 to 1969) will leave in the medium term.

Such disputes over the direction to be taken have stood in the way of a proactive immigration policy that manages immigration selectively, has rapid skill assessment procedures, creates legal certainty concerning employment prospects, links institutional responsibilities and involves the existing ethnic communities in the design and implementation of projects fostering integration. In view of the small number of (highly) qualified immigrants, approaches that include more systematic and clearly signposted pathways to integration once asylum has been granted seem to be gaining in importance.⁸

WHAT SORT OF IMMIGRATION DOES GERMANY WANT? How should immigration be managed in the future? There is no political consensus on a new *immigration act* that would comprehensively regulate migration from third countries. In the absence of such legislation, there can be no consistent and effective integration policy.⁹ It is, however, urgently needed in a country in which, by 2030, 25% of the population will have an immigrant background.

INTEGRATION IS DECIDED IN THE WORKPLACE. The world of work is unanimously regarded as a locus of particular significance for social cohesion.

8 A more professional profiling procedure would make it possible to identify refugees with excellent qualifications, who, should their asylum claim be rejected, could then be offered other immigration options (HINTE et al. 2015).

9 The Integration Act that was passed in 2016 is confined largely to arrangements and regulations for asylum seekers and refugees.

It is not just that here immigrants come into direct contact with the local population – in contrast to the rest of the time they spend in segregated neighbourhoods. In the 1950s to 1970s, both male and female immigrants found work mainly in manufacturing industry, where trade unions and works councils played a large part in ensuring that immigrants were employed on the same conditions as their German-born colleagues and had opportunities to participate in representative bodies. The situation today is different: recent immigrants are increasingly employed in segments of the labour market characterised by low pay, inadequate social standards and an absence of works councils. Immigrants are overrepresented among the employees in these segments of the labour market.

AN EXPLOSIVE ISSUE THAT MUST BE DEFUSED. Increasingly, attitudes towards immigration are becoming highly charged because the *distributional conflicts* in society as a whole have intensified (→ **PARTICIPATING IN THE WORLD OF WORK**). Digitalisation could further exacerbate this situation. Should it come to major shifts in the labour market, attitudes towards immigration will also harden further. Tolerance and solidarity will be put to the test. Should the far-reaching structural change in the economy hit the low-skill segment particularly hard, as several scenarios suggest, people with an immigrant background would be particularly affected, since jobs in this segment are often the only ones available to them – and it would also intensify competition for these jobs. Thus one of the major challenges of the digital transformation will be to ensure that it does not lead to the emergence of new divisions within society.

Consequently, the task will be to protect employment as an integrating factor and also to bolster those approaches that breathe fresh life into social solidarity. Various approaches are currently being debated in the research community. The concept of ‘*super-diversity*’ (MEISSNER/VERTOVEC 2015) is being seen as an answer to the increased diversity within societies that have to deal with migrants from a wide range of countries, who have come along different migratory routes and have varied legal and social situations, age and gender structures and qualifications. It is becoming increasingly important to manage this diversity.

Furthermore, it is being emphasised how important it is to have ‘*spaces of encounter*’ in which intercultural exchanges can be cultivat-

ed and where people can experience firsthand that, besides differences, there are also *shared values*. Values are not in any case rigid: the younger immigrants are in the future, the more likely it is that there will be a strong convergence with the values of the host society (BAMF 2016b).

WHERE CAN WE BEGIN?

The world has become ‘smaller’ not only because we are brought face to face with images of flight and displacement via the media and are given detailed explanations of the causes but also because those who have been displaced are seeking asylum in our country. At the same time, labour markets are structured on a global basis. German companies are connected worldwide and sell their products in markets across the world; business recruits labour selectively from abroad. How a balance between openness and protection might best be struck is a question that is crucial to maintaining social cohesion. We have to reach agreement on the appropriate level of immigration and successful integration.

LABOUR MARKET ACCESS FOR REFUGEES

If refugees are to have the opportunity to earn their livelihoods independently, placing them in employment should be the focus of our efforts. Germany has managed to launch a range of initiatives to this end in a relatively short time. It would be premature as well as inappropriate to pass judgement on these efforts here. Nevertheless, we can identify areas where the path into the world of work could be made smoother.

→ FOOD FOR THOUGHT DO NOT IGNORE TRAUMATISATION

Refugees often have a history of suffering, experienced both before leaving their home countries and en route to Germany. However justified and necessary every initiative to hasten their integration into the workplace and German society in general may be, it should not be forgotten that, unlike other migrants, those who have suffered are not always able to show a consistent level of performance and that it takes time for them to *deal with the aftermath of their flight and displacement*. Their experiences of war and their subsequent escape have left many refugees traumatised.

Consequently, integration measures are more likely to succeed when they do not ignore this traumatising but tackle the issue head-on and identify ways in which it might be overcome. However, those attempting to address refugees' difficulties in the workplace often reach their limits. It seems necessary, therefore, to provide information and advice for both sides, for refugees as well as for employers. Co-workers in the workplace should also be made more aware of refugees' trauma.

An increasing amount of knowledge about the long-term consequences of untreated traumatising among earlier generations of immigrants is now becoming available and it makes clear its impact on both individuals and the economy. Shortcomings in the treatment of trauma are already a problem that is likely to be further exacerbated by the arrival of large numbers of refugees that have been traumatised by war. These shortcomings must be addressed as a matter of urgency.

→ FOOD FOR THOUGHT PROMOTE LANGUAGE LEARNING IN THE WORKPLACE

Many companies offer internships to refugees. These make a very valuable contribution to integration, but many of these placements do not lead to a vocational training programme, since they are too short for refugees to learn German. Thus language turns out to be a major obstacle yet is the key to accessing jobs that pay a living wage. The Commission recommends that a *one-year language learning placement* should be introduced for people who have lodged an application for asylum and for other immigrants with little knowledge of German. This one-year placement should be structured in the same way as training in the dual system, i.e. it should combine on-the-job experiences with school-based learning.

One starting point would be to expand the ‘workplace integration year’, which combines work, language acquisition and training. The two pilot projects run by the Federal Labour Agency – ‘step by step’ and ‘Kommit’ – can be applied to all sectors. They offer a good pathway to the German dual vocational training system. At the same time, every effort must be made to prevent refugees being exploited as cheap labour.

Refugees also have a particular need for help in finding their bearings in the labour market. Many were unable to learn out about the German employment system and the various ways of accessing that system before they came to Germany. What seems to be required is a low-threshold, *comprehensive, cross-cutting advice service* (on schools, the dual system and higher education). The Commission therefore puts forward the idea of ‘integration coaches’.

Many immigrants come with experiences and qualifications from other education systems, with training curricula and forms of training that cannot be transferred into the German system directly, or at best only incompletely. In particular, intermediate-level qualifications (e.g. from vocational schools) are not comparable with qualifications obtained in the German dual system (BRÜCKNER 2013). The German legislature responded to such difficulties by passing the *Vocational Qualifications Assessment Act*, which came into force in 2012. According to this legislation, all immigrants are to have formal qualifications that they obtained abroad assessed and, where appropriate, recognised within a period of three months. For people with inadequate documentation, or none at all, the law provides for an *analysis of skills and qualifications*, in which competences informally acquired are also recorded and recognised.

Initial studies on the effect of the legislation have revealed positive results in terms of recognition but also some residual weaknesses. Firstly, the legislation regulates only those occupations that lie within the competence of the federal government. Thus occupations regulated on the level of the individual states (Länder), such as teaching and many engineering occupations, are not included. Secondly, because the German system serves as frame of reference, the process often leads to partial recognition only and thus to a devaluing of immigrants' experience, which might also make it necessary for them to undergo further training (BRUSSIG et al. 2013). This in turn means that many immigrants are still employed far below their actual level of education and training and are often overqualified for the work allotted to them. This results in *deskilling*.

POINT OF CONTROVERSY BUILD BRIDGES INTO THE GERMAN TRAINING SYSTEM

There is a need to amend the *Vocational Qualifications Assessment Act* with regard to the question of adaptation and catch-up training opportunities for unregulated occupations. The funding opportunities in particular are very patchy; since it is individual who need the catch-up training, it is difficult to organize training. In the future, support must also be provided for adaptation and compensatory measures. This would presumably have to be dealt with not in an immigration act but in the Recognition Act itself or in a directive.

In the Commission's view there is a particular lack of bridges leading from the qualifications immigrants have obtained in their home countries into the German training system. However, the question of how such bridges should be designed and to what extent the proven dual system of vocational training would be devalued as a result gave rise to heated debate ([→ EDUCATION AND TRAINING](#)). The Commission sees a need for a debate involving the social partners, the chambers of commerce and industry and all other relevant players.

The search for paths along which refugees can be integrated into the German training system affects some of the training system's fundamental principles. However pressing it may seem to integrate refugees quickly, it must also be made clear how the labour market can be made more easily accessible for immigrants without diluting, devaluing and undercutting the training system and the concept of well-defined occupations that underpins it. The Commission considered various arguments on this question.

One suggestion was that the concept of well-defined occupations, characteristic of Germany and reinforced by the dual vocational training system, should be combined with the Anglo-Saxon competence-based tradition. This would make it possible to classify the refugees in a way that reflected their actual situation as closely as possible while also making greater use of the European Qualifications Framework.

Critics took the view that such an approach comes with a twofold risk. Firstly, a flood of newly recognised certificates could lead to 'qualification inflation', effectively devaluing the achievements of those who have acquired vocational qualifications in Germany (risk of 'cut-

price occupations'). Secondly, The German training system, it was argued, had different objectives, the chief of which was the acquisition of an overarching competence in a specific occupation rather than a number of individual skills. Moreover, it was not that simple to recognise qualifications, particularly when it was a question of skills with safety implications (one had only to think of the health service or jobs involving the handling of hazardous materials).

One compromise solution would be to make it possible for workers to take training modules as part of the Federal Employment Agency's system of continuing vocational training. Take, for example, a skilled metal worker who has completed a course of training in his home country that equates to two thirds of the equivalent German training. In this case, preparatory courses for external examinations could be offered under the umbrella of the continuing training system. Such a scheme would simply be an extension of existing arrangements, since 50,000 external examinations are already taken each year in the German dual system.

The Commission agreed that the legislature and the trade unions should be called on to put forward proposals for making the training system more readily accessible for newcomers with previous experience.

RECOGNIZE DIVERSITY, END DISCRIMINATION

A number of different approaches and plans for living together respectfully and harmoniously have been debated; all of them have as their objective the *recognition of diversity* and the *protection* and (*self-*) *empowerment of the individual*.

As countries are becoming more interdependent, as production is carried out across national boundaries and workforces are becoming more heterogeneous, the *notion of diversity* has grown to be increasingly important in the world of work. Customers, negotiating partners and co-workers are to be respected and recognised, regardless of their personal characteristics, the so-called 'Big Eight', namely ability,

age, ethnicity, gender, race, religion, sexual orientation and socio-economic status. Differences are to be regarded not as shortcomings but as productive resources. Companies use *diversity management* as one element in a motivational work culture and for image building. Another aim is to avoid economic disadvantages caused by prejudices or discrimination.

The *Equal Treatment Act* enshrines protection against discrimination in law, thereby giving diversity management plans a legal basis. The Act aims to 'prevent or eliminate discrimination on the grounds of race or ethnicity, gender, religion or world view, disability, age or sexual identity'.

Not only direct but also indirect forms of discrimination are unlawful. Indirect discrimination occurs, for example, if an employer pays all permanent employees a sales bonus but excludes those on fixed-term contracts – and justifies so doing on the grounds that the latter will in any case soon be leaving the company. The permanent employees are mainly men, those on fixed-term contracts are mainly women. Since the employer, in declaring the reason for the difference in treatment, makes no mention of a lawful purpose for the distinction between the two groups, this can be regarded as indirect gender pay discrimination. Thus discrimination can be sanctioned not only in respect of individual actions but also when it arises out of rules that produce outcomes that are not neutral. As a result, certain aspects of structural and institutional discrimination have become politically significant as well.

The Federal Anti-Discrimination Agency has evaluated the Anti-Discrimination Act and concluded that measures of positive discrimination (affirmative action) that aim to compensate for existing disadvantages are indeed permitted by the legislation but are not used sufficiently in practice. These include, for example, targeted recruitment methods and grants for disadvantaged groups, diversity training, company agreements on promoting workforce diversity and target agreements on achieving certain quotas. Thus, as recommended in expert reports, company agreements and equal opportunity schemes could together create a more binding framework in order to overcome systemic discrimination.

There is also, it is argued, a need to amend the provisions of labour legislation that protect against discrimination. Besides an extension

of the obligation to ensure that calls for tender are non-discriminatory, European law is also in need of clarification, so that redundancies are also covered by the legislation. Furthermore, the legislature should state more clearly what obligations employers have to protect their employees from discrimination – including discrimination by colleagues, customers or business partners.

FOOD FOR THOUGHT NON-DISCRIMINATORY JOB APPLICATION PROCESSES

Several studies have demonstrated that discrimination by gender, name and origin certainly occurs in job application processes (e.g. SCHNEIDER et al. 2014). A study published recently by the IZA Institute of Labor Economics in Bonn showed that a Turkish name appearing on an application form is enough to reduce the chances of getting a job interview by 14 per cent and in smaller firms by as much as 24 per cent (WEICHELBAUMER 2016). The Commission argues that non-discriminatory processes (i.e. those in which neither gender, name nor address are shown) should be more widely used.

Anonymised applications contain no identifying particulars or features, such as a photo of the applicant, their name, address, date of birth, marital status or information on origin. In countries such as the USA and Canada, anonymised job applications are now common practice. In November 2010, the Federal Anti-Discrimination Agency launched a nationwide pilot project in which companies, public authorities and municipalities trialled anonymised application processes. This pilot project did indeed prove that anonymised job applications are technically easy to put into practice and can give women and people with an immigrant background in particular a better chance of being invited for interview. However, studies and pilot projects in other countries have produced less positive assessments. Further research is clearly necessary.

The integration of immigrants into the labour market takes place largely at company or establishment level. Since the 1960s, when so-called ‘guest workers’ were recruited to work in manufacturing industry, trade unions and works councils have taken up the issue of ‘diversity’ and launched various initiatives against discrimination and racism. By way of example, we can mention the inter-union initiative ‘Don’t mess with my mate! For equal treatment, against xenophobia and racism’. The unions have actively revived older approaches to community work, with immigrants being supported as they settle into their new environment.

However, one dilemma remains (PENNINX/ROOSBLAD 2000). On the one hand, the unions are advocating an open society, but on the other they want to protect their members from competition. This dilemma is far from being easily resolved, since it raises the thorny issue of how to reconcile solidarity with immigrants with the protection of employees already in place.

The capacity of codetermination rights and bodies to foster integration within immigrant and non-immigrant workforces is now proven. Although the ‘foreign worker committees’ that used to represent the rights of migrant workers have largely ceased to exist, works councils are actually more highly rated by employees with an immigrant background than by those without. Those who speak poor German and are older are particularly appreciative, because works councils act as supportive arbitrators in actual disputes (SCHMIDT/MUELLER 2013). To that extent, diversity management programmes have much in common with trade union positions (e.g. the ‘Decent Work’ approach). Much of what goes on today under the diversity management label is also to be found in the efforts of the trade union movement to promote equal treatment.

→ FOOD FOR THOUGHT DIVERSITY REAPPEARS ON THE CODETERMINATION AGENDA

Diversity management is often introduced top-down, which contradicts the basic notion of *participation*. However, works councillors are advocates of a corporate culture based on equality of treatment, respect and appreciation of diversity. Consequently, it goes without saying that they have a strong commitment to diversity management. However, economic factors such as power imbalances and diverging interests are sometimes neglected in diversity management programmes; what is more, they may actually reinforce stereotypes rather than eliminating them. Thus the codetermination actors should be brought in to play an active role in laying the groundwork for and formulating approaches to diversity management.

Finally, there remains the question of how trade unions and works councils themselves are dealing with diversity. IG Metall, for example, has clearly been successful in its sphere of influence, where an above-average number of works councillors and shop stewards have an immigrant background compared with the workforce as a whole (FOROUTAN et al. 2016). If employees' interests are to be well represented, there must also be diversity in representative bodies.

EMBED THE EUROPEAN SINGLE MARKET IN LABOUR POLICY

One of the pillars of the European Union is the European Single Market with *free movement* of goods, people, services and capital. Combined with a sizeable gap in prosperity between the member states, the free movement of labour has led to a considerable increase in *circular migration* within the European Union. Circular migrants work, for example, as farm labourers at harvest time, in the construction and meat processing industries and in the care sector.

Although the minimum wage applies to employees in subcontracting companies, posted workers are covered by collective agree-

ments (as stipulated in the Posted Workers Act) in nine sectors only. There are no data on the total number of posted workers, but surveys by trade unions put the share at 50% in some sectors, and in some cases at up to 90 per cent, particularly in the meat processing industry (NGG 2012). Moreover, in the German construction industry, posted workers outnumber individual migrants; posted workers are frequently employed in precarious or informal jobs (WAGNER 2015). The posting of workers was originally intended as an arrangement whereby specialist services could be provided in another country; however, by far the majority of European postings are now quite obviously used as a means of taking advantage of the gaps in power and prosperity within transnational labour markets in Europe for the purpose of *cost reduction* (LILLIE/WAGNER 2015). Qualitative studies show that *regulations are being circumvented*, principally through delayed or withheld wage payments, the manipulation of working times (leading to working hours that are longer than permitted and to undercutting the minimum wage), non-compliance with health and safety regulations and the provision of inadequate accommodation (FAUSER 2016).

FOOD FOR THOUGHT A REGULATORY FRAMEWORK TO COMBAT WAGE DUMPING

In the Commission's view, one of the core issues raised by circular migration in the European Single Market is the circumvention of collective bargaining agreements and labour legislation that apply in the host country. This encourages *competition based on undercutting*, which in turn leads to a reduced reach of collective bargaining agreements and the wages associated with them, non-compliance with minimum employment conditions, clandestine employment and organised fraud by employers who divert social insurance deductions. Wage dumping destroys faith in European integration and fosters hostility towards immigrants and migrant workers. Consequently, it is becoming increasingly important to ensure that the principle of 'equal pay for equal work at the same location' is effectively implemented and that the employment conditions prevailing in the host country are fully adhered to. The Commission therefore makes the following proposals:

- *Better protection for circular migrants* should be established at the European and the member state level. This requires a regulatory framework based on the principle of ‘equal pay for equal work at the same location’.
- *Enforcement of the law* should be improved. The enforcement authorities will have to recruit more staff, particularly the division of German customs responsible for the monitoring of illegal work. It is proposed that instruments such as an electronic European social insurance register should be introduced, which would make it possible to monitor the diversion of social insurance contributions by unscrupulous employers in real time.
- The Commission recommends that *liability should be strengthened for contracting entities*, especially for those at the beginning of subcontractor chains. It also suggests that consideration be given to limiting subcontractor chains, e.g. to three ‘links’ per single job.
- It also proposes that the *Posted Workers Act*, which currently provides for the application of collective agreements in nine sectors only, should be *extended to all sectors*.

At the European level, legislative initiatives are being negotiated that will affect the working and employment conditions of circular migrants in the single market. Care should be taken to ensure that the ‘*place of work*’ principle is strengthened and that the ‘*country of origin*’ principle is not introduced.

Plans to introduce a ‘European Services E-Card’ in order to reduce the bureaucracy associated with cross-border activities are judged to be problematic. The E-Card could create new gateways for bogus self-employment and clandestine work that would evade the existing monitoring arrangements in Germany.

The ongoing *revision of the Posted Workers Directive* should be used to ensure that the collective agreements also apply to posted workers.

The *black list* of companies that have infringed the provisions of European employment and social law is welcomed by the Commission, since it will prevent letterbox companies and fraudulent companies from being awarded public contracts.

Circular migrants suffer from a particular lack of protection in the labour market and are therefore all the more dependent on effective interest representation (PRIES/SHINOZAKI 2015). However, they are concentrated in precisely those sectors in which trade union density is low. At the same time, cross-border labour mobility challenges the established structures of interest representation.

Even though the representation of circular migrants is not yet a focus of trade union activity, there are already organising strategies in place to address the issue. Campaigns on the living wage and 'decent work' (the general principle adopted by the International Labour Organisation/ILO) also make migrant labour a key issue. There are new forms of support and advice as well.

Three initiatives in Germany are worthy of particular mention. The aim of the German Trade Union Confederation's *'Fair Mobility' project* is to improve the situation of foreign workers, particularly Eastern European workers, in the German labour market and to take into account the often temporary and circular nature of labour mobility and the precarious employment situations associated with it. Besides local advice services, 'Fair Mobility' also features transnational cooperation with trade unions in the migrants' countries of origin. The *MigrAr advice centre* is devoted primarily to circular migrants and their labour law problems. The pilot project, launched by the ver.di services trade union in Hamburg, has now spawned imitators in other towns and cities. The German Construction, Agriculture and Environment trade union (IG BAU) responded to the problematic employment conditions experienced by migrant workers by initiating an association called the *European Migrant Workers Union*. Its operations take the form of third-party funded projects with native-language advisors who frequently function as mediators between workers, trade unions, the division of German customs responsible for the monitoring of illegal work and public prosecutors' offices.

The main lesson that IG BAU has taken from its experiences with the European Migrant Workers Union is that the considerable expenditure incurred in supporting and organising migrant workers can hardly be recouped in the short to medium term. Financing these activities confronts the trade unions with a dilemma, since funding has to come out of members' dues and their services have to be targeted at members; circular migrants, however, are seldom trade union

members. Because of their particular situation, successes in organising these people, who live and work between two or more countries, are few and far between. Moreover, the standard instruments of labour law are often difficult to use to further the interests of migrant workers because the interrelations and cross-holdings on the employers' side are too opaque and the migrants' position is too weak. Thus it is important to create publicity and to approach German companies contracting migrant labour, particularly when companies are engaged in criminal practices.

FOOD FOR THOUGHT PROMOTE INTEREST REPRESENTATION FOR CIRCULAR MIGRANTS

The Commission recommends that support for circular migrants be strengthened and expanded. This constitutes a particular challenge because the cost of providing appropriate support and organising these migrants is immense and can scarcely be met out of the unions' resources. Consequently, projects are to a large extent dependent on *third-party funding*. Long-term public support is necessary in order to fund these projects on a long-term basis and to put them on a financially secure footing.

FRAMEWORK FOR CHANGE

SHAPING THE FUTURE



**PROMOTE
INNOVATION,
STRENGTHEN
COHESION**



WHERE DO WE STAND?

Germany is still regarded as the very model of a social market economy, in which the market is not allowed to operate untrammelled by regulation but is organised for the welfare of society as a whole. The model also includes the principle of a fair distribution of what is produced collectively and the economic and social protection of all workers. The instruments for this are a sophisticated body of labour law, a social policy that protects the lives of individuals and families against the major risks in life and gives a hearing to people's social, cultural and political concerns and a social partnership that is intended to safeguard the institutionalised coordination processes and codetermination.

Germany is a leader in many areas of economic activity and considered an adaptive economy. The background for this, besides a relatively low unemployment rate, is the country's successful weathering of the economic and financial crisis of 2008/2009. However, the successful model has its dark sides. The balancing act between economic growth and a social justice does not seem to be succeeding.

THE END OF THE SOCIAL MARKET ECONOMY? Distinct cracks in Germany's image as a social market economy have been visible since at least the 1980s. In response to the labour market crisis, dismissal protection was diluted and mini-jobs (marginal part-time employment) were promoted (→ **PARTICIPATING IN THE WORLD OF WORK**). Companies were to be able to use labour more flexibly; protections for workers were cut back. And with the passing of the Hartz reforms, even those who had paid into the social insurance schemes for decades were expected to accept severe cutbacks. Job seekers became the objects of an 'activating' labour market policy, in which for example, the offer of a job below a person's level of qualification is regarded as reasonable.

The welfare state came to be considered as too expensive and as a competitive disadvantage. This led to far-reaching reforms. Welfare

rules were ever more toughened (LESSENICH 2008). It was judged reasonable for families to be obliged to use up their savings or to cash in the life insurance policies that were supposed to offer them some security, as it was for them to have to move out of their homes and leave their familiar surroundings. Even when people found themselves in dire straits through no fault of their own (e.g. becoming unable to work because of long-term illness), the state would no longer be there to provide assistance.

SOCIAL INEQUALITY AS THE NEW REALITY. Even if, by international standards, Germany still has a high level of social protection, for many people in the country *social inequality* has reached too high a level (BMAS 2016a; MAU/HEUER 2016). This is by no means merely a ‘subjectively perceived’ imbalance. At the beginning of the millennium, incomes in Germany were considerably more equally distributed (BUNDESREGIERUNG 2017).

Whereas it was long assumed that inequality was good for *economic growth*, it is now widely believed even among economists that, beyond a certain level, inequality has a negative effect on the economy (OECD 2015; PALLEY 2016; BEHRINGER et al. 2016). An analysis conducted on behalf of the Friedrich Ebert Foundation shows that the increase in inequality in Germany between 1991 and 2015 noticeably curbed economic growth. If income inequality had remained at the 1991 level, German GDP would have been 40 billion euros higher in 2015 (ALBIG et al. 2016).

THE ECONOMY HAS SUCCESSES TO REPORT. The cutbacks in the social insurance system coincide with the country’s *successful track record in the labour market*. Manufacturing industry in particular is the engine of Germany’s economic growth. In contrast to the extensive deindustrialisation experienced in many other countries, Germany has a *stable manufacturing core*. Despite the high and continuously increasing share of service work (70 per cent), manufacturing remains stable in absolute terms. What was regarded in many places as an obsolescent model ten years ago is now once again seen across the world as a strength. Germany is now credited with having the potential to develop its own path to growth (BORGER 2016; PROGNOSE AG 2016; IFO 2017).

ECONOMIC SUCCESS BUT WITH DEPENDENCIES. Nevertheless, it has to be noted that Germany’s economic success is *highly dependent on exports*. The country runs high *trade surpluses*; domestic demand, on

the other hand, is relatively weak, although it has risen somewhat in recent years, partly as a result of the introduction of the minimum wage and pay rises in collective bargaining agreements. Germany's current account surplus has for years exceeded the threshold value of six per cent of GDP which, according to EU rules, signals a macroeconomic imbalance; in 2016, the surplus stood at almost nine per cent. Nevertheless, what is true of most highly developed economies also applies to Germany: growth is low. Gross value added per hour worked is also rising very slowly. Between 1995 and 2005, it was rising by an average of 1.9 per cent per year; between 2005 and 2014, however, the average annual increase was only 0.8 per cent. There are various explanations for the low growth figures, including an increase in the number of people working, the completion of outsourcing programmes, a slowdown in the pace of ICT-based innovation and the expansion of the service sector.

LOW PUBLIC INVESTMENT. The investment rate in Germany is low, at less than two per cent of GDP in 2016. The public *infrastructure* in

particular was neglected for decades and is still regarded as underfunded¹ (BMWi 2016). This concerns the transport network, childcare (in West Germany) and provision for those in need of long-term elder care. The OECD has recommended repeatedly that Germany invest more in its (social) infrastructure, and particularly in education. By international standards, Germany's public service is underdeveloped², while state expenditure on education is below average (→ **EDUCATION AND TRAINING**). If schools and universities are underfunded, despite high tax receipts, it will be difficult to make the digital transformation happen.

GERMANY IS DRIFTING APART. The extent to which people share in the country's economic success varies from region to region. Some regions enjoy full employment, while in others unemployment remains persistently high. These regional inequalities

are becoming entrenched or in some cases are actually increasing. Some regions find themselves in a vicious circle of debt, unemployment and emigration (ALBRECH et al. 2016). By international stand-

1 *Gross expenditure on capital equipment* relative to economic output has been on a downward trend for decades. In 1970, the public investment rate was 4.7 per cent; by 2013 it had declined to just 1.6 per cent (Rietzler 2014). The need for investment is greatest – and still growing – on the level of the municipalities (KfW RESEARCH 2016).

2 In 2004, the public service in Germany accounted for just 11 per cent of total employment. Only in Japan is the share of total employment lower (STATISTA, no year).

ards, the regional differences are not (yet) extremely pronounced, but some problematic trends are emerging. The social and economic differences between the eastern and the western part of the country (along the lines of the former division between the communist and the capitalist part of the country) and between the generally poorer northern and the more prosperous southern part of the country as well between individual municipalities are increasing. In Germany's large cities, 21 per cent of inhabitants suffer from low purchasing power because of the high cost of living, whereas in rural areas the figure is only 14 per cent (RÖHL 2016). Germany's constitution, however, stipulates that living conditions should be similar across the whole country, an important factor in maintaining social cohesion.

SOCIAL PARTNERSHIP PUT TO THE TEST. The social partnership has always been under pressure to justify itself, since it attempts to overcome conflicts of interest (→ PARTICIPATING IN THE WORLD OF WORK). Attitudes towards it fluctuate. At times, the trade unions in Germany have been denounced as a 'brake on growth' when the search was on for a scapegoat to blame for a fraught economic situation and rising unemployment. On the other hand, international researchers have long regarded codetermination as a competitive advantage because the German system is very flexible in enabling solutions to be found at industry, company and establishment level in times of crisis (e.g. GOLDSCHMIDT 2016). Consequently, the need to revitalise the social partnership is being debated widely – and is already being incorporated into proposals for reforming the world of work (BMAS 2016b; JIRJAHN 2011).

In 2014, 46 per cent of employees in western Germany and 39 per cent of employees in eastern Germany were working in establishments and companies bound by collective agreements. While union density and coverage by collective bargaining agreement are still high in manufacturing industry, despite a downward trend, both are much lower in the craft and service sectors. However, it is precisely these two sectors that are responsible for ever increasing shares of industrial output as a result of outsourcing. Besides the east-west gap in coverage by collective agreement, there are also differences depending on size of firm (→ PARTICIPATING IN THE WORLD OF WORK).

Since equalisation in the social market economy is achieved largely through the social partnership, the decline in coverage by collective

agreement is problematic. Solutions based on social partnership enable both companies and employees to take a long-term view. The decline in coverage by collective agreement is interpreted by researchers as a significant factor in the growing inequality in Germany (MAU 2015b; BOSCH/KALINA 2015).

WHAT SHOULD WE BE PREPARING OURSELVES FOR?

Many people in Germany look at Silicon Valley with a mixture of fascination and anxiety. ‘Silicon Valley’, which has become a code word, understood throughout the world, for innovation, growth and ‘disruption’³. The Chinese model represents an alternative approach: instead of venture capital, it is the state that takes the initiative. The growth generated by this model is no less dynamic. Businesses such as the telecommunications equipment manufacturer ZTE and the networking and telecommunications equipment and services company Huawei have developed within a short period of time from pure manufacturing companies to high-tech companies operating throughout the world (BAUMS/SCOTT 2013).

HOW CAN THE GERMAN ECONOMY STAND ITS GROUND? While many fear that Germany is running the risk of becoming Silicon Valley’s contract manufacturer because the innovations are being generated by others (KEESE 2016, among others), others predict that the country’s economic success will continue. They base their argument on the advantages of the German production system: the solid, research-intensive manufacturing base, a productive service sector, flexible high-quality production, a multitude of medium-sized companies operating globally, the dual vocational training system and the close collaboration between applied research and manufacturers (LANG et al. 2016; HBS 2016).

Germany’s capacity for innovation seems to be intact. According to the Global Innovation Index, Germany is now among the top ten (CORNELL UNIVERSITY et al. 2016). Germany is a world leader in robotic engineering and in sensor technology, as well as in control and systems engineering (BEISE/SCHÄFER 2016).

3 ‘Disruption’ in this context means a revolutionary transformation of traditional business models and value chains triggered by technological developments. (CHRISTENSEN 1997).

TRANSFORMATION OF THE SOCIAL PARTNERSHIP. Technological progress not only produces new business and organisational models but also causes established rights and agreements to be called into question. According to some employers, the structural change makes it necessary to review existing standards; this is reflected, for example, in the debate on the Working Time Act (BDA et al. 2016; BDA 2017). The trade unions, in turn, defend the gains they have made to date and see a need to transfer the three-stage *system of protective rights* – statutory minimum standards, collective bargaining agreements and agreements on the company level – into the new world of work. Besides the declining coverage by collective agreement, there is also the fact that many small and medium-sized enterprises do not have a works council that can breathe life into collective agreements (ELLGUTH/TRINCZEK 2016). Against this background, plans to strengthen the social partnership, coverage by collective bargaining agreement and codetermination are meeting with a positive response, even in the federal government.⁴

⁴ In its proposals for reform, the draft of the white paper 'Work 4.0' published by the Federal Ministry of Labour and Social Affairs relies on incentives to join employers' associations and trade unions (BMAS 2016b).

The greatest challenge facing the German system of corporate codetermination is the increasingly transnational organisational structures that companies are adopting. As a result, their decision-making centres are more and more likely to be located outside Germany. European (corporate) law, e.g. the introduction of the European Company (*Societas Europaea*), and gaps in the German codetermination legislation are hastening the flight from and circumvention of codetermination.

IN SEARCH OF THE DIGITAL DIVIDEND. Researchers attribute 0.37 percentage points of the annual economic growth in the industrialised nations between 1993 and 2007 to the use of robots (GRAETZ/MICHAELS 2015); management consultants are forecasting increases in industrial value added worth billions for Europe (ROLAND BERGER 2015). Nevertheless, digitalisation has not yet proved to be the hoped-for engine of growth and productivity. The German economy clearly grew in 2009 and 2010 after the crisis-induced slump, but afterwards growth flattened out again, reaching 1.9 per cent in 2016 (2017 forecast: 1.5 per cent, PROJEKTGRUPPE GEMEINSCHAFTSDIAGNOSE 2017).

It is proving more difficult than had been hoped to turn investments in digitalisation into increased profits (WORLD BANK GROUP

2016). And nor is productivity increasing exponentially as was expected. On the contrary: in many highly developed industrialised countries, productivity growth has weakened considerably since the 1990s (BDI 2016).⁵ The debate on the reasons is still in a state of flux. The analyses vary. While some argue that the gains of digitalisation have already been more or less exhausted or that future gains have been overestimated (HORN et al. 2017), others believe that it will take some time for the effects of the technological innovations to trickle down or that they do in fact exist but that it has not (yet) proved possible to measure them (WEBER et al. 2017).

THE RESOURCES OF THE STATE. The state maintains its system of transfer payments to ensure an equitable distribution of resources within society. The state also provides the *basis for economic activity*, through investment in the infrastructure, the transport system, the education and training system, childcare, healthcare and the public administration. The state invests in research and development, which is then appropriated by new businesses and established companies as a basis for constructing business models and producing further innovations.

All these investments require sound financing. It is important, therefore, to give some consideration to the revenue side. Globalisation and digitalisation raise the question of how the state might best gain access to corporate profits. The proposals range from a *machinery and robot tax* (advocated by the head of Deutsche Post, Frank Appel, for example) to an *added-value levy*⁶ (advocated by the Austrian Social Democrats, for example) and to the idea of a *data tax*. However, all these proposals come up against hurdles. A machinery tax, for example, would disadvantage conventional manufacturing companies compared with the digital economy.

However, since it is not yet foreseeable what effects digitalisation will have on the number of jobs, tax revenues, social insurance and income distribution in Germany and across the world, the debate on how to access the gains of digitalisation will have to continue.

⁵ This 'productivity paradox' was preoccupying the economist Alvin Hansen as early as the 1930s (BMAS 2016b). Today, the Nobel laureate Paul Krugman and the Harvard economist and former senior US Treasury Department official Larry Summers are prominent exponents of 'secular stagnation' theory (RÜRUP 2015).

⁶ An added-value levy would shift the basis for assessing social insurance deductions from a company's wage bill to the value added it generates.

WHERE CAN WE BEGIN?

A high-performance economy is dependent on the contribution of working people, for whom participation in the world of work is supposed to provide material security, social wellbeing and secure prospects. The *state* has an *important role* to play in this: it ensures that the conditions conducive to economic activity and innovation are in place, but also that conflicting interests are reconciled, by not leaving individuals exposed to market forces and by *providing social welfare*.

If it is increasingly felt that this description more closely resembles a normative goal than reality, then *action is required*. There are two conceivable options. In the first, we say farewell to the social market economy for good, since nothing generates more disengagement from the political system than the incantation of empty formulas. The second option calls for a thorough *revitalisation of the social market economy* so that it can do justice to its name again. Great enthusiasm for the second option continues to be expressed by politicians of all stripes, but so far there have been few discernible attempts to turn words into action.

The structural change being driven by technological innovations offers an opportunity. It raises anew many questions linked to work, ranging from rights and rules in collective agreements to our understanding of what constitutes prosperity and productivity. The structural change also brings the relationship between the state, the economy, social partnership and civil society into the equation. Who should not only be listened to but also be genuinely involved? The digital transformation is opening up a new, historic opportunity. The state can seize this opportunity to play a part in shaping the transformation, making the social market economy sustainable for the long term. This can be achieved by combining economic prosperity, environmental sustainability and social wellbeing.

THE STATE IN ACTION

In every democracy, and especially in a social market economy, the state plays a key role in shaping change. It helps to bring needs and wishes into line with each other, presides over the efforts to balance out conflicting interests and involves key players such as the social partners and NGOs in the decision-making process. The state here is not conceived as a ‘nation state’ but rather as a *representative of plural interests* that shapes general living conditions at the various levels of the political sphere (from the international to the municipal). It is essential to defend this concept of the state in a situation in which right-wing forces have declared themselves the mouthpieces of the ‘true will of the people’ and the proponents of ‘direct democracy’.

In a rapidly changing world, the state is hardly able to draw up a master plan for the future. Rather, it can and must use the democratic channels of participation to launch and take charge of a process in which diverse interests and needs can be taken into account and *agreement reached on the aims of the transformation*. As far as the future of work is concerned, it can collaborate with the social partners and employment specialists to develop an understanding of how economic activities are going to change and how technological innovations can be utilised in work organisation and design. In doing so, if it is to remain true to the basic philosophy of the social market economy, it must constantly bear in mind the need to strike a balance between economic and social interests.

→ FOOD FOR THOUGHT THE STATE SHAPES THE TRANSFORMATION

There are numerous initiatives on the digitalisation of the world of work, most of them organised on a tripartite basis (e.g. 'Plattform Industrie 4.0' and 'Dialogprozess Arbeiten 4.0', organised by the Federal Ministry of Labour and Social Affairs, and the federal government's 'Hightech-Strategie'). Individual states (Länder), eager to drive forward debate on these issues, have also set up commissions, advisory groups and councils. The Commission recommends that these activities should be linked more closely and that an *innovation strategy* should be developed in collaboration with the social partners and civil society.

Within this strategy, the objectives and guiding principles for the transformation of the world of work should be developed. Technological and social development should be considered together. Among other things, this means taking account of all aspects of the transformation of work, and in particular its social effects and opportunities. The innovation strategy should not adhere too rigidly to a sector-based approach but should take into account the newly emerging interrelationships and dependencies in value-adding processes that extend beyond the borders of individual industries or sectors. In the various platform activities to date, too little attention has been paid to services. This applies to social services in particular. They should be regarded as an integral part of a holistic innovation strategy.

→ FOOD FOR THOUGHT A BROAD DEFINITION OF INNOVATION

The Commission proposes a broad definition of innovation that encompasses *technological and economic innovations* together with *environmental and social innovations*.

When technological innovations are used to meet social challenges, they become social innovations that help, for example, to preserve the environment, improve mobility, fight disease or facilitate communications. However, innovations – and in view of the focus in the public and media debate on ‘Industry 4.0’ this is often ignored – are not necessarily technological in nature. There can also be pure ‘social’ innovations.

Daniel Buhr defines social innovations as ‘innovations which, on the one hand, contribute to the dissemination and diffusion of technological developments at the social level and, on the other hand, represent practices that are developed and used by the individuals, groups and organisations concerned and serve to overcome social challenges’ (BUHR 2015). According to this definition, the introduction of workplace codetermination in 1952 was a social innovation. Social innovations are no less relevant to economic success than technological innovations. One innovation that was simultaneously technological, environmental and social in nature was the introduction of measures to combat air pollution in the 1970s (‘Blue Skies over the Ruhr’).

Technological innovations have the potential to stimulate economic activity. They are thus the precursors of productivity increases and *material prosperity* but also harbour the risk that technology will not be applied in the interests of the population. It is the ambivalent nature of technological progress that makes defining innovation a challenge.

What seems to be necessary is some kind of *trade-off between what is possible and what is socially desirable*. Which new technologies do we regard as improving our quality of life and as innovations in their entirety? On the other hand, which innovations have destructive

potential or violate rights regarded as the basis for social coexistence? Harking back to a tried and tested instrument, namely *technology assessment*, might help here. Technology assessment is the study and evaluation of new technologies. It adopts a global perspective and considers the effects of new technologies on society and the environment. The federal government is supporting technology assessment by providing basic funding and grants and putting in place research programmes.

FOOD FOR THOUGHT SHIFT THE FOCUS OF TECHNOLOGY ASSESSMENT

In the Commission's view, technology assessment needs to broaden its perspective. It cannot persist in simply considering the use of technology but must take into account the *changes taking place in the economy and society*. One important area, for example, is the change in decision-making processes stemming from the increasing use of algorithms. It is imperative that the effects of innovations and new technologies on jobs and on working and employment conditions are captured and evaluated.

Therefore, technology assessment should not start with the consequences but also take account of the *process through which innovations emerge*. What are the participation processes involved? It is not simply for reasons of democratic involvement but also economically plausible for such a perspective to be adopted.

The Commission proposes that the scope of technology assessment should be extended to encompass to a greater degree the consequences of digitalisation, taking account of the effects on communication, social relations and organisations. The state should create incentives to encourage the adoption of this broader perspective and lay down criteria for research and other initiatives in this area.

Finland and Sweden are two countries that have *institutionalised a far-reaching innovation policy* that also drives social innovations. Both countries are pioneers in this area. The innovation policy institutions in Finland include coordination platforms such as the ‘innovation cabinet’ and agencies such as Tekes that fund research, development and innovations; both countries also have a public procurement system that prioritises innovation. In both countries the procurement system is used as an instrument to harness the high demand in the public sector for ICT equipment, software, data banks and services to help innovative products achieve market breakthrough (ANDERSSON et al. 2016).

→ FOOD FOR THOUGHT INTRODUCE A PROCUREMENT SYSTEM THAT PRIORITISES INNOVATION

The Commission advocates the introduction of a *public procurement system that prioritises innovation*, modelled on the Finnish and Swedish systems. The Commission sees a twofold advantage in such a system. Firstly, such an instrument can be used to find innovative solutions to new social challenges (e.g. innovations in the service sector, ‘open innovation’ concepts, urban development measures, smart cities). Secondly, the instrument can be used to create reference markets for innovative products. Since local authorities are not obliged to choose the lowest tender, there is nothing to prevent them from introducing such an innovative procurement system.

In order for this innovative procurement system not to be introduced at the expense of social considerations, it should be combined with other aspects. In addition to the inclusion of a clause requiring compliance with collective bargaining agreements, it would be conceivable to restrict awarding public contracts to companies with a works council in order to give innovative young companies an incentive to set up works councils.

It is striking that, in the current debate on digitalisation, the subject of *economic sustainability* has been very much pushed to the margins, although the targets laid down in the 2016 Paris Agreement demand a considerable commitment to environmental transformation that Germany has agreed to. The ‘decarbonisation’ that is called for will mean massive structural change. Industries are coming under pressure, manufacturing processes are changing, new areas of employment are emerging. At the same time, there is increasing talk of the ‘digitalisation of the energy revolution’ and plans for climate protection are increasingly seeing digitalisation as an opportunity.

Germany can build on a history of *experience with transformation*. With regard to sustainability and energy policy, the country succeeded through a combination of regulation and incentives in stimulating high levels of investment in breakthrough technologies. The original Renewable Energy Sources Act, which regulated the preferential feed-in of electricity from renewable sources into the national grid and guaranteed generators fixed feed-in tariffs, led to a breakthrough for renewable energies in Germany and has since been copied in many countries. Germany can certainly build on this track record of innovation. At the same time, further efforts are necessary: the grid has to be expanded, and the transformation to renewable energies also has to be equitable and socially acceptable in terms of cost.

One area with great potential is resource-saving product use, particularly in view of digitalisation and changing values (‘sharing rather than owning’). Digital tools are making it increasingly easy to do just that, as car-sharing schemes and online barter clubs demonstrate. As far as production is concerned, environmental sustainability is also an issue. Sustainability can be improved, for example, by using resources more efficiently in the production process as well as by extending product life cycles. When considering a product’s environmental balance sheet, reference is frequently made to the ‘cradle to cradle’ ideal, i.e. a waste-free society in which the by-products of one product’s manufacturing cycle can be fed into another cycle and used again.

It is true that the sharing and repair economy leads to job losses in manufacturing; however, it creates work in other places. There is much potential for job creation in the repair economy and in reman-

ufacturing. The same applies to conventional manufacturing companies: Caterpillar, the world's largest manufacturer of construction machinery, has been successfully reconditioning diesel engines in its factories since as long ago as 1972 (FORD/DESPEISSE 2016).

→ FOOD FOR THOUGHT SUPPORT ENVIRONMENTALLY FRIENDLY DIGITAL INNOVATIONS

An economic policy that pays no attention to the limits on available resources or the environmental consequences of production processes is not sustainable. The Commission recommends, therefore, that the digital transformation should be harnessed in pursuit of environmental objectives.

The contribution that digital technologies can make to a more efficient use of resources and the support they can provide for climate protection goals has been neglected. Plant and product utilisation can be improved with the aid of new technologies and new business models ('sharing economy'). Many product life cycles have tended to become shorter in recent years rather than longer. Many business models are based on a constant flow of new or upgraded products (smartphones, for example), while many other products are designed to break down at a relatively early stage of their lives ('built-in obsolescence'). However, new manufacturing technologies can help to reverse this trend. Instead of manufacturing new products, greater reliance is (once again) being placed in some areas on repairs. Digital developments such as 'additive manufacturing' (3D printing) are making a decisive contribution here, leading to drastically shortened in supply chains.

New technologies also harbour within themselves resource-saving potential; however, this potential will not be tapped automatically, which is why incentives are needed. The Commission recommends that digitalisation and the environment should be more systematically considered in conjunction with each other and proposes a digital-environmental path to transformation.

Such a *digital-environmental transformation path* can be illustrated by taking the example of the tax reliefs for repairs that were introduced in Sweden in 2017. VAT on repairs, of bicycles or shoes for ex-

ample, was cut from 25 to 12 per cent; repairs on large electrical goods, such as refrigerators or washing machines for example, have been tax-deductible since the beginning of the same year. In Germany too, the state could actively put in place similar incentives, even though this can only be a small element of a larger sustainability strategy.

THE STATE INVESTS

FOOD FOR THOUGHT LOOK DIFFERENTLY AT INVESTMENT VS. CONSUMPTION IN PUBLIC SPENDING

The Commission recommends that the statistical divide between consumption and expenditure in public expenditure be broken down. In accordance with the regulations on national accounting, public consumption and public investment are recorded separately. In the public debate, the impression is frequently given that while public expenditure for investment is absolutely desirable, too a high share of public expenditure actually goes for consumption and is therefore largely unproductive. In fact, however, the statistical divide between public consumption and public expenditure is based on a false logic. Thus by way of example, expenditure on state school buildings is categorised as investment, while expenditure on teacher's salaries is recorded as public consumption. Clearly, however, both types of expenditure can be construed as investment since their aim is to improve the education provided. Similar arguments can be made for various areas of social policy. Against this background, a new debate is required on the extent to which public expenditure, regardless of how it is currently assigned in the national account systems, supports growth in the economy as a whole over the long term.

Public and private investment plays an important role in long-term growth processes. A decline in investment activity leads to a reduction in potential output – and therefore endangers economic prosperity in the long term. Investment activity in Germany is below the average for all OECD countries. A glance at the statistics shows that for the last two decades *investment activity in Germany has been at historically low levels* – this is also known as the ‘*investment gap*’, i.e. a discrepancy between the investment required and that actually undertaken that must lead to asset erosion. The DIW Berlin (German Institute for Economic Research) has put Germany’s investment gap at about 75 billion euros (which equates to three per cent of GDP). If the gap were to be closed, growth could increase by 0.6 percentage points (BACH et al. 2013). This investment shortfall is felt everywhere, but particularly on the federal and municipal level.

For several years, Germany has had high tax revenues, yet the investment rate has remained low. It is true that the public budget surplus is currently being depleted by the expenditure on accommodating and integrating refugees, but there is still considerable *room for manoeuvre*. Despite the additional expenditure, the public budgets should still be in surplus to the tune of 0.4 per cent of GDP in 2016 (HORN et al. 2016b). Considering the fact that a structural deficit of 0.5 per cent of GDP is permissible, there is indeed scope for long-term investment despite the self-imposed commitment to a balanced budget.

→ FOOD FOR THOUGHT USE PUBLIC INVESTMENT TO GIVE FRESH IMPETUS

Public investment lays the foundations for an efficient and effective public life, which largely depends on an adequate infrastructure. The Commission thus recommends that public investment should be significantly *strengthened*. At a time of structural change it is absolutely essential to go on the offensive and invest in → EDUCATION AND TRAINING and the digital infrastructure (but without neglecting investment in the physical infrastructure).

It would at least be possible to deviate far enough from the self-imposed goal of a fully balanced budget, to make full use of the leeway afforded by the permitted 0.5 per cent structural deficit. Furthermore, there were several voices in the Commission that noted that making use of the structural deficit provision, despite the current increase in tax revenues, would not be sufficient – the Länder, they argued, were already only managing by setting up public urban development companies (such as Hafen-City GmbH in Hamburg). For this reason, they felt, adherence to the self-imposed commitment to a balanced budget was to be challenged, bearing in mind the need for investments that would bear dividends over the long term. It was argued that if the country had always pursued such a restrictive fiscal policy, large parts of today's infrastructure, and with them the country's prosperity, would never have come into being.

The public are usually unaware that the state plays an *active role in innovations* – which are often ascribed to individual geniuses and 'garage inventors'. Many of the innovations and technologies supposedly developed by individuals not only came into being as a result of complex collaborations but also owed a great deal to *state subsidies* (HELLIGE 2006; MAZZUCATO 2015). Even the 'Californian model', which most people probably think of as financed primarily by private venture capital, actually relies on massive public investment and support (BAUMS/SCOTT 2013).

In Germany, the state has concentrated on supporting *basic research*. This compensates for a *specific market failure* – namely too low a level of business expenditures on research and development. So should the state also provide more support for private investment or even invest in new technologies and business models itself? The Commission discussed different approaches.

POINT OF CONTROVERSY THE STATE EXPLORES NEW AVENUES FOR INVESTMENT

One debate revolved around the question of how directly the state should participate in economic processes in order to promote innovations and/or innovative or strategically important sectors of the economy. The opinions expressed within the Commission fall into three positions.

One position maintained that the state should restrict itself to *improving the general conditions* for private investment, particularly by keeping up the infrastructure (education, research, transport networks etc.). When it came to direct investment, on the other hand, the state should concentrate on compensating for market failures. Only in this case, it was argued, was it sensible for the state directly to manage investment activity. Even investment incentives were currently ineffective because low interest rates meant that credit was cheap and easy to obtain. Thus companies' reluctance to invest had to be due to other factors, which would first have to be investigated more closely.

The second position was that the state should indeed not invest directly in innovative sectors but should at least *make it cheaper to invest in innovations*, by introducing opportunities for tax write-off, for example.

The third position was critical of the fact that the state had withdrawn from many areas over the past 30 years and had reduced its role to correcting aberrations of the market. These voices called for the state to be brought out of its role on the 'sidelines of market activity' and to return to the playing field. They suggested that the state should *deliberately assume some of the risk* of developing new technologies. In this way, it would be possible, they argued, to focus on the social de-

sign of new technologies at an early stage, to involve the social partners and civil society and to make negotiating processes on the development and support of new technologies part of the democratic process. In this context, the establishment of a *state investment fund* was discussed, whose brief it would be to support highly innovative technologies and to invest in industries of the future or key national companies. In contrast to what is often assumed, state investment funds also exist in countries such as France and Italy that lack raw materials. The question of where the fund would derive its capital from remained unresolved. It would also be necessary to prevent the fruits of state risk financing being completely appropriated by private interests.

There are great opportunities to be tapped in Germany's so-called *Mittelstand*, the small and medium-sized enterprises (SMEs) that employ the majority of the country's workforce. The size and importance of the *Mittelstand* make it one of the unique features of the German economy. However, SMEs are very far from having tapped the full potential of digitalisation. There is still a yawning chasm between the ambitious objectives set out in the Industry 4.0 strategy and its actual implementation (SCHROEDER 2017B). While the great beacons of the German economy such as Siemens, Bosch and parts of the automotive industry, as well as individual *Mittelstand* companies, are already far advanced in the implementation process, the majority of manufacturing companies, particularly the SMEs, are lagging behind the challenging targets for the implementation of new technologies (EFI 2015).

Overall, according to a study by KfW, the German government-owned development bank, about one third of SMEs are currently still in the elementary stages of digitalisation, meaning that an above-average share of them have not even put in place basic applications such as their own websites. Small companies with fewer than 50 employees are overrepresented among these digital laggards. Around half of Germany's SMEs are at an intermediate stage and make use, for example, of individual applications of networked digital information and communication technologies. Companies at the cutting

edge of the digital transformation, i.e. those that already rely on digital products, services, apps or the Industry 4.0 concept, account for a scant fifth of the Mittelstand.

The *obstacles* mentioned by SMEs include data protection issues, high investment and operating costs and Internet connection speeds that are too low, as well as their workforces' inadequate IT skills (ZIMMERMANN 2016). Not all SMEs are able to manage digitalisation from their own resources. Those who do not digitalise quickly enough will get into difficulties in their supply chains in particular. Support seems to be required here.

POINT OF CONTROVERSY

SUPPORT DIGITAL SMEs

It was repeatedly emphasised in the Commission that the Mittelstand requires particular support in order to manage the transformation and to take advantage of the opportunities associated with it. This begins with IT training for the workforce but also includes a range of consulting services on data protection and the introduction of digital technologies. The question of whether there should also be financial assistance (in the form of tax reliefs, for example) for investment in digitalisation was debated vigorously.

A number of voices were raised in support of such assistance. However, support should not be untargeted, it was argued, but rather linked to criteria such as adherence to collective bargaining agreements. Representatives of civil society and the social partners should also be involved in deciding which innovative products and business models to support. Opponents of such financial assistance argue that digitalisation was also a rationalisation strategy and was therefore not worthy of support per se. They also queried how much state support should be given to companies that were unable to stand on their own two feet in the market.

It was agreed that SMEs are more dependent than large companies on a *good regional infrastructure*. This is where indirect support could start; the universities of applied sciences (Fachhochschulen) also play an important role here.

REVITALISE THE SOCIAL MARKET ECONOMY

Digitalisation has to contend with a German population of which certain segments have come to feel extremely insecure – and it can ratchet up even further the pressure on employment and the regulation of employment. Even the most euphoric forecasts about the effects of digitalisation assume that there will be a considerable number of losers. The signs are already there. While many are in very secure positions, others find themselves fighting a downward spiral or have already lost the struggle. The outlines of a polarised society are visible already (FRATZSCHER 2016), and even more so in France and the USA.

Regional disparities in Germany are also already pronounced and digitalisation could further increase them. This raises the question of how society can regain the strength it needs to maintain social cohesion. Part of the answer is that the state has to meet its obligation to provide services of public interest throughout the country. These include technical services (transport infrastructure, communication services, energy supply, housing) as well as social services (education, childcare, sports facilities, health and social care, cultural offerings, public safety) (KERSTEN et al. 2015). Many regions only have a bare-bones provision in these areas. Demographic change will lead to significant ageing of the population and low birth rates in some regions, so that regions that are already weak will be weakened even further. However, these services of public interest are essential to the smooth functioning of the economy and stimulate economic activity as well.

→ FOOD FOR THOUGHT HUMANE AND SIMILAR LIVING CONDITIONS

Support for economic activity and investment in technological and economic innovations are not ends in themselves but should serve to secure the living and working conditions of all members of society. It is the task of the state to support people in creating these living and working conditions themselves, which makes it responsible for establishing the general conditions to help them do so. The equivalency and similarity of living and working conditions are enshrined in the German constitution. The state is responsible for ensuring *similar living conditions* in all regions of Germany.

The Commission emphasises that ensuring the equivalence of living conditions should become *the guiding principle of state activity*, thus putting into practice the philosophy of the welfare state. This task cannot be achieved by the municipalities and local authorities alone. The Länder and the federal government must also be involved in meeting this responsibility to ensure equivalence of living conditions.

POINT OF CONTROVERSY PROVISION OF REGIONAL PUBLIC SERVICES AS A JOINT TASK

In order to ensure that a basic level of infrastructure facilities and systems continues to be provided in the future, the Commission considered enshrining the *provision of regional services* of public interest as a *joint responsibility of the federal government and the Länder* in the constitution, with a 50/50 division of the costs (see also KERSTEN et al. 2016). This would make it possible to use federal resources to set up a regional support fund, allowing to combine the fragmented instruments now used to deliver support for regional services of public interest (namely, regional economic development and improvement of agricultural structures and of coastal protection), into a single regional support and development scheme.

→ FOOD FOR THOUGHT INFRASTRUCTURE AS A PREREQUISITE FOR THE WELFARE STATE

The Commission recommends that the fundamental role played by infrastructure policy in supporting social cohesion in general and the digital transformation in particular should be examined. Infrastructure policy has already made something of a comeback in recent years – even though it has gone largely unnoticed under other names, such as ‘energy sector turnaround’, ‘electromobility’ and ‘demographic change’ (BAUMS/SCOTT 2013).

Stronger efforts need to be made to *put in place a high-performance network infrastructure* and to launch a skills offensive in all parts of the education and training system. However, there are other challenges that infrastructure policy has to contend with. These include demographic change, a new division of labour within families and environmental imperatives. There is a particularly urgent need for the infrastructure to be developed in the *care sector*, e.g. by expanding the provision of high-quality day care facilities for children and genuine all-day schools and increasing the supply of places for those requiring elder care. As rents in urban areas rise, *the housing sector* is another important aspect of infrastructure policy.

Access to high-speed broadband connections is becoming crucial for businesses. Companies in rural regions complain about poor connections (KURI 2017). For private individuals, access to high-speed broadband is an increasingly decisive factor in determining access to paid work, culture, education and medical care. Consequently, broadband has become a key category for the distribution of life chances. The state is challenged, therefore, to ensure that rural regions are not left behind as digitalisation proceeds.

At the same time, a *democratic* approach should be adopted in developing a new infrastructure policy with a view to putting in place a genuinely participatory infrastructure. On the one hand, ‘*social spaces*’ can be promoted as one way of strengthening social cohesion, as well as ‘*personal infrastructures*’ in the form of voluntary work, time for care activities and helping out on neighbourhood projects.

On the other hand, *collective (work) spaces* should also be established. Technological advances mean it is possible to work almost anywhere; at the same time, however, it is known that innovations are

generated by interaction and cooperation. Communal co-working spaces have the potential to generate a new dynamic: they bring people working in isolation together again socially – and thereby make them able to act collectively.

Unless citizens have confidence in the welfare state, the transformation will not succeed. The task of *renewing the promise to citizens that the welfare state represents* goes beyond infrastructure measures. The welfare state's protective function plays a key role in maintaining social cohesion in the transformation process and hence in ensuring its success. This point was not examined in a separate Food for Thought section because it is too complex. Rather, it runs like a thread through all the chapters of this report (and in particular → **PARTICIPATING IN THE WORLD OF WORK**, → **INCOME**, → **WORKING TIME**).

The *social partnership and codetermination* are central pillars of the social market economy. Both ensure that, as the structural change progresses, structural conflicts are converted into jointly agreed pathways to solutions. The social partnership seems to be experiencing something of a renaissance right now, which has its roots in the constructive approach to managing the 2008/2009 crisis. In manufacturing industries in particular, cooperation between management, works councils, the parties to collective bargaining and the government succeeded in developing a robust approach to crisis management that largely protected the workforce from immediate job losses, which in turn proved to be advantageous for the economy as a whole after the crisis. Since then, the German Council of Economic Experts (the government's economic advisory body) and leading economic research institutes, among others, have emphasised the important part the trade unions played, not only in ensuring industrial peace but also in maintaining Germany's economic competitiveness and overcoming the crisis.

That is why the social partnership is once again a factor to which many employers and employers' associations in Germany relate positively – and it is (once again) seen as part of the social market economy's success story. And even in the debates on structural change, the social partnership is still talked of as having a significant role to play.

Nevertheless, the social partnership is in a *fragile* state. Since the mid-1990s, there has been a decline not only in union density but also in the share of companies covered by collective bargaining agreements. By creating a membership category that does not require members to adhere to collective agreements, the employers' associations have made it respectable for employers to abandon collective bargaining.

Academic analyses of German employment relations have now identified 'three worlds of social partnership' (SCHROEDER 2017a). The first world consists of the core segments of manufacturing and exporting industry, in which the so-called 'conflict partnership' is still functioning. The second world is made up of medium-sized companies and parts of the public service. Employment relations here are still regulated by the 'conflict partnership', but are described as 'abrasive' and 'unpredictable'. The third world, finally, consists of small and medium-sized enterprises in the private service sector. This third world is characterised by 'conflict without partnership'. This applies particularly to the – highly feminised – social services sector (and especially the care sector). The traditional German employment model with its industry-wide collective agreements has never penetrated this world at all.

If codetermination is regarded as a constituent element of the social market economy, then the question that arises is how to help it take root in the 'codetermination deserts' – and how the tools of codetermination will have to be refashioned to make them effective outside the manufacturing sector and the public service.

POINT OF CONTROVERSY STRENGTHEN SOCIAL PARTNERSHIP AND CODETERMINATION

The Commission considers a functioning social partnership and a robust system of codetermination to be essential to the success of the digital transformation. That transformation can be brought about only through a process of negotiation. If that process is to be successful, a social partnership in which the two sides negotiate on a *level playing field* is necessary. There was a consensus within the Commission on the goal of ensuring that the ‘level playing field’ principle should be maintained. The only disagreement was on how to achieve that goal and on the instruments to be deployed. The debate revolved around the following aspects (among others):

Walk the talk on commitment to works councils. Codetermination is the trade mark of the social market economy and a guaranteed right. Nevertheless, fewer than half of all dependent employees work in companies with a works council. One in six attempts to establish a works council is blocked. A clear commitment to codetermination as the democratic principle underpinning the German economy requires the framework conditions to be readjusted.

Electing a works council by the standard voting procedure is a multifaceted and protracted process that is susceptible to wilful disruption by the employer. Even the simplified voting procedure for which the Works Constitution Act has provided since the 2001 reform poses great challenges for anyone seeking to initiate a vote for the first time. Consequently: resolve open legal questions, simplify the voting procedure and extend the simplified voting procedure to companies with fewer than 100 employees.

Besides simplification, works council elections need to be better protected against attempts by the employer’s side to influence or thwart them. The following proposals were made:

- improved dismissal protection for candidates and those attempting to set up works councils
- rigorous prosecution and sanctioning of attempts to prevent the establishment of works councils (e.g. by setting up specialist public prosecution services or prosecuting cases within existing specialist departments, such as white-collar crime units)
- imposing higher financial penalties

— make obstructing elections a criminal offence that has to be prosecuted by the authorities and not only if an already elected employee representative or a trade union with representation within the company so requests

Make collective agreements effective industry-wide. As the welfare state has been cut back in recent years, more and more responsibilities have been devolved to those negotiating agreements at industry or company level (e.g. flexible transitions into retirement, occupational pensions). At the same time the reach of collective agreements is shrinking. As a result, gaps in protection are emerging, leading to new inequalities in the labour market. There is, therefore, a growing need to extend the fruits of collective bargaining, whether at industry or company level, by declaring the resultant collective agreements generally binding throughout the industry in question. It would seem sensible to wait and see what the effects will be of the legislation that has already lowered the barriers for such a step (→ **INCOME**). Should it become clear that the legislation is still largely ineffective, consideration should be given to abolishing the social partners' right of veto.

Right for social partners to take group action. While consumer associations, for example, have the right to take group actions in order to defend the rights of consumers, the social partners are not entitled to support individual employees collectively. The pros and cons of giving the social partners the right to take group actions as well should therefore be considered.

Close the loopholes that allow corporate codetermination to be circumvented. The election of employee representatives to companies' supervisory boards gives codetermination additional democratic legitimacy and effectiveness. More than 65 years after codetermination was introduced, it seems to be necessary to extend its legal foundations in such a way that it can stand firm against the changes wrought by the digitalisation and transnationalisation of work and economic activity and continue to contribute to the development of participation and decent work. At least 800,000 employees are currently being deprived of parity representation on supervisory boards by various legal ruses (HBS 2016). There is a particular need, therefore, to reduce the opportunities for legal avoidance and circumvention of statutory codetermination. Various possibilities are conceivable:

It should be made clear in the law governing employee participation in a European company (SE) that codetermination has to be renegotiated if the number of SE employees in Germany rises above the threshold values laid down in the German codetermination legislation.

Secondly, the law governing employee participation in companies with a number of employees between 500 and 2000 (Drittelbeteiligungsgesetz) should be amended in line with the regulations on group allocation in the Codetermination Act and the inclusion of joint-stock companies within the scope of the Codetermination Act.

Additionally, the Codetermination Act can be extended to include foreign legal forms with branches, subsidiaries or administrative centres in Germany.

Every EU directive on company law can potentially give rise to new risks for codetermination. This was made clear by the debates on the introduction of a European private company (which fell through in 2011) and the single-person company (SUP).

There is a risk that further harmonisation of EU Law, e.g. on the cross-border transfer of companies' registered offices, corporate mergers or break-ups, will completely exclude the question of employee representation on supervisory boards or boards of directors. What is required, therefore, is a debate on a new architecture for employee involvement in SEs and other companies with a legal status grounded in EU law. A part of this architecture could be Europe-wide threshold values for codetermination in companies with a European legal form. A 'codetermination escalator' could conceivably be introduced, with dynamic threshold values, so that the level of codetermination they guarantee rises as the number of employees rises.

Revitalise the social partnership. The social partnership itself is also in need of renewal. The trade unions are called upon to improve their legitimacy by introducing some elements of direct democracy into their affairs and above all involving the workforce to a much greater extent in the negotiation of collective agreements, especially at the company level. Good examples of this already exist (e.g. the collective agreement at the Charité hospital group, IG Metall's employee surveys). The employers' associations are called on to revise their decision to permit membership without coverage by collective agreement.

PROSPECTS

So where do we go from here? The Commission was given the task of exchanging views on the world of work and identifying the challenges facing the actors in labour policy. The results of the Commission's discussions are the proposals and recommendations in seven thematic areas outlined in the sections headed Food for Thought. Even if those proposals and recommendations vary in scope, all of them address in one way or the other the crucial question of *how responsibility and accountability have to be reorganised in the new era of digital capitalism*. The proposals and recommendations touch upon a wide range of different aspects, but one question runs through them like a thread: how can we successfully create a world of work that is humane, socially balanced and sustainable?

The more radical the transformation turns out to be, the more *solutions grounded in a spirit of solidarity* will be required in order to maintain social cohesion and ensure that, in the workplace as in the wider society, security, decent work and a high quality of life prevail. The *social partners* are confronted with the challenging task of making the transformation of the world of work as transparent and participatory as possible. As the third member of the partnership, the *state* has to make its contribution by ensuring that the digital transformation adheres to the rules of the social market economy.

The Commission deliberately set out its proposals under the heading Food for Thought. It reflects the fact that, however able and willing the Commission was to formulate recommendations, it was also acutely aware that the circumstances are complex and that too many of the possible consequences amount to little more than speculation and conjecture. Well-founded, empirically verified information is, however, essential in order to assess the suitability of labour policy interventions and instruments reliably – and in order to be able to take corrective action in good time if adverse effects arise.

One historical reference point for the Commission's deliberations was the 'Humanisation of Work' programme (1973–1989). This was a nationwide framework programme, funded by the federal government, that constituted the first attempt to lay the scientific foundations for a world of work designed with people in mind. The Commission argues that a similarly comprehensive programme should once again be put in place, this time in the shape of a *research and knowledge transfer programme on the 'Humanisation of Work in the Digital Age'*.

This programme should pursue four main objectives:

1. to fill gaps in research;
2. to consolidate existing research and knowledge;
3. to provide targeted support for the transfer of those stocks of knowledge into everyday practice;
4. to initiate a broad-based social policy dialogue on the quality of work.

The major current research programmes on the world of work, such as the German Federal Ministry of Education and Research's 'Future of Work: Innovations for the Work of Tomorrow' programme, will produce important new insights. We have identified in this report those areas where there is a vital need for further research. We clearly need considerably more research-based information on the margins of the service society, changed business models, new supply chains and new forms of work. In some cases, research in these areas is still a long way from producing well-founded results – which would also have to be evaluated in terms of the connections between them. Also, the working people's point of view is frequently ignored.

Furthermore, it is becoming increasingly clear that digitalisation is giving rise to new conflicts at the level of individual jobs, the workplace and the wider society. There is a lack of knowledge here as well. How might we react to these conflicts? What legal and social instruments are available? When do such conflicts become destructive? How can they be managed constructively? Further research efforts will not be sufficient here. What is needed instead is *transfer-oriented reflection*, ideally involving all the relevant actors.

As part of an extended work and employment research agenda, attention should also be paid to the *potential of the digitalisation pro-*

cess for democratisation and emancipation – and of course the associated question of how this potential might best be realised in law, in collective bargaining agreements and in the workplace.

There are few other countries like Germany with such a broad-based *collective learning process on the digital transformation*. The Federal Ministry of Labour and Social Affairs has already published the results of its dialogue process in its white paper 'Work 4.0'; besides the work of this commission, numerous other bodies (e.g. the federal government's 'High Tech Forum' and the 'Industrie 4.0' platform) are also shedding light on current developments and challenges.

This knowledge now has to be drawn together and considered in a coordinated way. The dynamic of change requires permanent dialogue and for that a structure is needed for collectively evaluating the findings and developing specific initiatives. The Commission recommends that a transfer structure be created in order to *bring together* the available *knowledge* on the consequences of the changes in the world of work, to quantify their economic impact, to draw up criteria for sustainable approaches and the measures to be included therein and to develop models for implementation on the ground.

The move from processes of dialogue to implementation also has to be organised. For this, a structure is required for coordinating work and employment research and workplace practice. The transfer structure could make a significant contribution to this as well.

Bearing in mind the new research and transfer programme it has proposed, the Commission also suggests that a *broad-based and well-coordinated dialogue on the quality of work in Germany* should be launched. This dialogue should go well beyond the aspects that are dominating this topic today – namely pay, the employment relationship and working time – and address issues related to the actual design of work processes, to job content and skill requirements and to structures for cooperation. Efforts should also be made within such a dialogue format to involve all the relevant actors in acquiring expertise for the research and transfer programme.

Finally, let us look back to a proposal mentioned earlier in the report that could complement the new transfer programme. The federal government could introduce a system of regular *reporting on the world of work*, as it already has done in other areas (e.g. reporting on poverty and wealth and on equal opportunities). Just as there are

regular progress reports on developments in the economy as a whole, regular reporting on the situation of people in work would be of immense economic and social value, since it would provide timely warnings of problems in the ‘labour society’ – and at the same time point to successful examples of sustainable digital transformation in the world of work.

The Commission on the Work of the Future was a forum that brought together experts from various fields at regular intervals. We experienced these meetings as a collective educational exercise, learnt a great deal from each other, benefited from the mutual experiences and gained insights into (and understanding of) other ways of looking at the world. The report passes on something of this learning process, or so we hope. We invite the actors in labour policy to give further consideration to our proposals and recommendations.

In this report, we have confronted the digital transformation without losing sight of the characteristics and distinctive features of our society. The report outlines the *idea of a digital social market economy* – and the path towards it. This is highly dependent on cooperation and will succeed only if there is a *transformation pact* in which all the actors reach agreement on the need to shape the transformation in a socially balanced way.

GLOSSARY

All-day school

German elementary schools have traditionally finished at around 1 p.m. (and secondary schools not much later). Many 'all-day schools' do not extend instruction into the afternoon but offer extra-curricular activities only.

Critics contend that schools thus forego the chance of changing teaching and learning, e.g. by offering longer, more interactive formats, by providing differentiated instruction for different skill levels and by integrating homework into the regular schedule, all of which would benefit pupils with a disadvantaged socioeconomic background.

On a more practical level, extra-curricular activities in the afternoon often come without an iron-clad guarantee that pupils will be supervised until a certain hour, thus requiring parents working full time to seek out day-care after all.

Company

Despite their slight legal differences, the terms 'company' and 'firm' are used interchangeably in this publication, following common usage.

Dual vocational training system, also: Dual system

The dual system combines an apprenticeship in a company and classroom education in a vocational school.

Hartz IV, also: Hartz

The commonly used label for a reform of the social assistance system. Social assistance was integrated into the system for the more generous unemployment benefits, which in most cases can now only be drawn for 12 months (as opposed to up to five years before the Hartz reforms) before social assistance kicks in. Social assistance is now often referred to as Hartz IV.

Mini-jobs

Marginal part-time jobs that are not subject to income taxes if the total monthly earnings from mini-jobs stay below a threshold of 450 euros. Mini-jobs require no social insurance contributions from the employees. Most employees opt out of paying the standard payroll deduction for their pensions, increasing the risk of poverty in retirement.

Self-employment

The term 'self-employment' is understood to refer to self-employment without employees only.

'Splitting' system

The 'splitting' system of calculating the tax liability of married couples allows both spouses to pay taxes on half their combined income, effectively lowering the tax liability for the main breadwinner when the incomes differ significantly. The 'splitting' system rewards the traditional role allocation and encourages an unequal division of paid work between husband and wife.

Standard employment relationship, also: Standard employment

An employment relationship that is open-ended, covered by social insurance (unemployment, health, elderly care and occupational accident insurance, plus a pension scheme) and generally held on a full-time basis. A broader definition also includes part-time jobs, but only those involving 20 or more hours' work per week.

REFERENCES

- ABSENGER, NADINE; AHLERS, ELKE; HERZOG-STEIN, ALEXANDER; LOTT, YVONNE; MASCHKE, MANUELA; SCHIETINGER, MARC (2016): Digitalisierung der Arbeitswelt? Mitbestimmungs-Report No. 24. Hans Böckler Foundation, Düsseldorf.
www.boeckler.de/pdf/p_mbf_report_2016_24.pdf.
- ACATECH (ed.) (2016): Kompetenzentwicklungsstudie Industrie 4.0 – Erste Ergebnisse und Schlussfolgerungen. Acatech, Munich.
www.acatech.de/fileadmin/user_upload/Baumstruktur_nach_Website/Acatech/root/de/Publikationen/Kooperationspublikationen/acatech_DOSSIER_Kompetenzentwicklung_Web.pdf.
- AHLERS, ELKE (2015): Leistungsdruck, Arbeitsverdichtung und die (ungenutzte) Rolle von Gefährdungsbeurteilungen. In: WSI-Mitteilungen, 3/2015, pp. 194–201
www.boeckler.de/wsimit_2015_03_ahlers.pdf.
- AHLERS, ELKE (2016a): Arbeit und Gesundheit im betrieblichen Kontext. Befunde aus der Betriebsrätebefragung des WSI 2015. WSI Report No. 33, December 2016. Institute of Economic and Social Research, Hans Böckler Foundation, Düsseldorf.
www.boeckler.de/pdf/p_wsi_report_33_2016.pdf.
- AHLERS, ELKE (2016b): Psychische Belastungen im Arbeitsschutz. Fachtagung Psychische Belastungen in der Arbeitswelt – Ansätze zur Primärprävention. Carl von Ossietzky University, Oldenburg.
www.uni-oldenburg.de/fileadmin/user_upload/koopera/Ahlers_Vortrag_Psychische_Belastungen_Arbeitsschutz_OL.pdf.
- ALBERT, MATHIAS; HURRELMANN, KLAUS; QUENZEL, GUDRUN (2015): Jugend 2015: eine pragmatische Generation im Aufbruch (Shell Jugendstudie No. 17). Fischer Taschenbuch Verlag, Frankfurt.
- ALBIG, HANNE; CLEMENS, MARIUS; FICHTNER, FERDINAND; GEBAUER, STEFAN; JUNKER, SIMON; KHOLODILIN, KONSTANTIN (2016): Zunehmende Ungleichheit verringert langfristig Wachstum. Analyse für Deutschland im Rahmen eines makroökonomischen Strukturmodells. Friedrich Ebert Foundation, Bonn.
<http://library.fes.de/pdf-files/wiso/12953.pdf>.
- ALBRECH, JOACHIM; FINK, PHILIPP; TIEMANN, HEINRICH (2016): Ungleiches Deutschland: Sozioökonomischer Disparitätenbericht 2015. Friedrich Ebert Foundation, Bonn.
<http://library.fes.de/pdf-files/wiso/12390.pdf>.
- ALLMENDINGER, JUTTA; DRESSEL, KATHRIN (2005): Familien auf der Suche nach der gewonnenen Zeit. In: Aus Politik und Zeitgeschichte, 23–24/2005, pp. 1–6.
www.bpb.de/apuz/29005/familien-auf-der-suche-nach-der-gewonnenen-zeit.
- ALLMENDINGER, JUTTA; WOWEREIT, KLAUS (eds.) (2015): Gleiche Rechte – gegen Diskriminierung aufgrund des Geschlechts. Bericht der unabhängigen Expert_innenkommission der Antidiskriminierungsstelle des Bundes. Federal Anti-Discrimination Agency, Berlin.
www.antidiskriminierungsstelle.de/SharedDocs/Downloads/DE/publikationen/Handlungsempfehlungen_Kommission_Geschlecht.pdf?__blob=publicationFile&v=5.

- AMLINGER, MARC (2014): Lohnhöhe und Tarifbindung, Bestimmungsfaktoren der individuellen Verdiensthöhe. WSI Report No. 20, December 2014. Institute of Economic and Social Research, Hans Böckler Foundation, Düsseldorf.
www.boeckler.de/pdf/p_wsi_report_20_2014.pdf.
- ANDERSSON, LARS FREDERIK; ALANJA, ANTTI; BUHR, DANIEL; FINK, PHILIPP; STÖBER, NIELS (2016): Innovationsstrategien in Zeiten der Digitalisierung. Ein Vergleich der Innovationspolitik in Finnland, Schweden und Deutschland. Friedrich Ebert Foundation, Bonn.
<http://library.fes.de/pdf-files/wiso/12795.pdf>.
- ANTIDISKRIMINIERUNGSSTELLE DES BUNDES (2013): Diskriminierung im Bildungsbereich und im Arbeitsleben. Zweiter Gemeinsamer Bericht der Antidiskriminierungsstelle des Bundes und der in ihrem Zuständigkeitsbereich betroffenen Beauftragten der Bundesregierung und des Deutschen Bundestages. Berlin.
www.antidiskriminierungsstelle.de/SharedDocs/Downloads/DE/publikationen/BT-Bericht/Gemeinsamer_Bericht_zweiter_2013.pdf?__blob=publicationFile.
- ARBEITSKREIS SMART SERVICE WELT; ACATECH (eds.) (2015): Smart Service Welt – Umsetzungsempfehlungen für das Zukunftsprojekt Internetbasierte Dienste für die Wirtschaft. Final report. Acatech, Berlin.
www.acatech.de/fileadmin/user_upload/Baumstruktur_nach_Website/Acatech/root/de/Projekte/Laufende_Projekte/Smart_Service_Welt/Bericht_SmartService_mitUmschlag_barrierefrei_HW76_DNK2.pdf.
- ARMUTAT, SASCHA; DORNY, HANS-JÖRG; EHMANN, HANS-MARTIN; EISELE, DANIELA; FRICK, GEROLD; GRUNWALS, CHRISTIANE; HESSLING, KARL-HEINZ; HILLEBRAND, HARTMUT; SKOTTKI, BIANCA (2016): Agile Unternehmen – Agiles Personalmanagement. Deutsche Gesellschaft für Personalführung e. V. In: Praxispapiere, 1/2016.
www.dgfp.de/fileadmin/user_upload/DGFP_e.V/Medien/Publikationen/Praxispapiere/201601_Praxispapier_agileorganisationen.pdf.
- ARNTZ, MELANIE; GREGORY, TERRY; ZIERAHN, ULRICH (2016): The Risk of Automation for Jobs in OECD Countries. A Comparative Analysis. OECD Social, Employment and Migration Working Papers No. 189. OECD Publishing, Paris.
<http://dx.doi.org/10.1787/5jlz9h56dvq7-en>.
- ATKINSON, ANTHONY B. (2016): Ungleichheit. Was wir dagegen tun können. Klett-Cotta, Stuttgart.
- ATKINSON, R. D.; EZELL, S. J.; ANDES, S. M.; CASTRO, D. D.; BENNETT, R. (2010): The Internet Economy after 25 Years of .com. Transforming Commerce and Life. The Information Technology and Innovation Foundation, Washington, D. C.
- AUTH, DIANA (2013): Ökonomisierung der Pflege, Formalisierung und Prekarisierung von Pflegearbeit. In: WSI-Mitteilungen, 6/2013, pp. 412–417.
www.boeckler.de/wsimit_2013_06_auth.pdf.
- AUTORENGRUPPE BILDUNGSBERICHTERSTATTUNG (2016): Bildung in Deutschland 2016. Ein indikatorengestützter Bericht mit einer Analyse zu Bildung und Migration. W. Bertelsmann Verlag, Bielefeld.
www.bildungsbericht.de/de/bildungsberichte-seit-2006/bildungsbericht-2016/pdf/bildungsbericht-2016/bildungsbericht-2016.
- BA – BUNDESAGENTUR FÜR ARBEIT (2016a): Der Arbeitsmarkt in Deutschland. Frauen und Männer am Arbeitsmarkt 2015. Statistik/Arbeitsmarktberichterstattung, June 2016. Federal Employment Agency, Nuremberg.
www3.arbeitsagentur.de/web/wcm/idc/groups/public/documents/webdatei/mdaw/mtgx/~edisp/egov-content455624.pdf.

- BA – BUNDESAGENTUR FÜR ARBEIT (2016b): Der Arbeitsmarkt in Deutschland – MINT-Berufe. Statistik/Arbeitsmarktberichterstattung, March 2016. Federal Employment Agency, Nuremberg.
www3.arbeitsagentur.de/web/wcm/idc/groups/public/documents/webdatei/mdaw/mtgx/~edisp/egov-content455624.pdf.
- BA – BUNDESAGENTUR FÜR ARBEIT (2017a): Der Arbeits- und Ausbildungsmarkt in Deutschland. Monthly report, December 2016. Federal Employment Agency, Nuremberg
<https://statistik.arbeitsagentur.de/Statistikdaten/Detail/201612/arbeitsmarktberichte/monatsbericht-monatsbericht/monatsbericht-d-0-201612-pdf.pdf>.
- BA – BUNDESAGENTUR FÜR ARBEIT (2017b): Beschäftigung – Die aktuellen Entwicklungen in Kürze, March 2017. Federal Employment Agency, Nuremberg.
<https://statistik.arbeitsagentur.de/Navigation/Statistik/Statistik-nach-Themen/Beschaeftigung/Beschaeftigung-Nav.html>.
- BA – BUNDESAGENTUR FÜR ARBEIT (2017c): Fluchtmigration. Arbeitsmarkt kompakt, March 2017. Federal Employment Agency, Nuremberg.
<https://statistik.arbeitsagentur.de/Statischer-Content/Statistische-Analysen/Statistische-Sonderberichte/Generische-Publikationen/Fluchtmigration.pdf>.
- BACH, STEFAN; BALDI, GUIDO; BERNOTH, KERSTIN; BLAZEJCZAK, JÜRGEN; BREMER, BJÖRN; DIEKMANN, JOCHEN; EDLER, DIETMAR; FARKAS, BEATRICE; FICHTNER, FERDINAND; FRATZSCHNER, MARCEL; GORING, MARTIN; KEMFERT, CLAUDIA; KUNERT, UWE; LINK, HEIKE; NEUHOFF, KARSTEN; SCHILL, WOLF-PETER; SPIESS, C. KATHARINA (2013): Deutschland muss mehr in seine Zukunft investieren. In: DIW Wochenbericht, 26/2013, pp. 3–5.
www.diw.de/documents/publikationen/73/diw_01.c.423458.de/13-26.pdf.
- BADURA, BERNHARD; DUCKI, ANTJE; SCHRÖDER, HELMUT; KLOSE, JOACHIM; MACCO, KATRIN (eds.) (2011): Fehlzeiten-Report 2011. Führung und Gesundheit: Zahlen, Daten, Analysen aus allen Branchen der Wirtschaft. Springer-Verlag, Berlin and Heidelberg.
- BADURA, BERNHARD; DUCKI, ANTJE; SCHRÖDER, HELMUT; KLOSE, JOACHIM; MEYER, MARKUS (eds.) (2016): Fehlzeiten-Report 2016. Unternehmenskultur und Gesundheit – Herausforderungen und Chancen. AOK Bundesverband und Wido – Wissenschaftliches Institut der AOK. Springer Verlag, Berlin and Heidelberg.
- BADURA, BERNHARD; STEINKE, MIKA (2011): Die erschöpfte Arbeitswelt: Durch eine Kultur der Achtsamkeit zu mehr Energie, Kreativität, Wohlbefinden und Erfolg! Bertelsmann Foundation, Gütersloh.
- BAMF – BUNDESAMT FÜR MIGRATION UND FLÜCHTLINGE (2011): Integrationsreport. Migranten am Arbeitsmarkt in Deutschland. Working Paper No. 36.
www.bamf.de/SharedDocs/Anlagen/DE/Publikationen/WorkingPapers/wp36-migranten-am-arbeitsmarkt-in-deutschland.pdf?__blob=publicationFile.
- BAMF – BUNDESAMT FÜR MIGRATION UND FLÜCHTLINGE (2015): Wanderungsmonitoring: Erwerbsmigration nach Deutschland. Jahresbericht 2015.
www.bamf.de/SharedDocs/Anlagen/DE/Publikationen/Broschueren/wanderungsmonitoring-2015.pdf?__blob=publicationFile.
- BAMF – BUNDESAMT FÜR MIGRATION UND FLÜCHTLINGE (2016a): Wanderungsmonitoring: Erwerbsmigration nach Deutschland. Im Zeitraum von Januar bis September 2016.
www.bamf.de/SharedDocs/Anlagen/DE/Publikationen/Broschueren/wanderungsmonitoring-jan-sept-2016.pdf?__blob=publicationFile.
- BAMF – BUNDESAMT FÜR MIGRATION UND FLÜCHTLINGE (2016b): Migrationsbericht des Bundesamtes für Migration und Flüchtlinge im Auftrag der Bundesregierung. Migrationsbericht 2015. Federal Ministry of the Interior, Berlin.

- BAUA – BUNDESANSTALT FÜR ARBEITSSCHUTZ UND ARBEITSMEDIZIN (2015): Arbeitswelt im Wandel. Zahlen – Daten – Fakten. Ausgabe 2015. Federal Institute for Occupational Safety and Health, Dortmund.
www.baua.de/DE/Angebote/Publikationen/Praxis/A92.pdf?__blob=publicationFile&v=14.
- BAUA – BUNDESANSTALT FÜR ARBEITSSCHUTZ UND ARBEITSMEDIZIN (2016): Arbeitszeitreport Deutschland 2016. Federal Institute for Occupational Safety and Health, Dortmund.
www.baua.de/DE/Angebote/Publikationen/Berichte/F2398.pdf?__blob=publicationFile&v=16.
- BAUMS, ANSGAR; SCHÖSSLER, MARTIN; SCOTT, BEN (eds.) (2015): Kompendium Industrie 4.0. Wie digitale Plattformen die Wirtschaft verändern – und wie die Politik gestalten kann. Kompendium Digitale Standortpolitik, volume 2.
<http://plattform-maerkte.de/wp-content/uploads/2015/11/Kompendium-High.pdf>.
- BAUMS, ANSGAR; SCOTT, BEN (eds.) (2013): Kompendium Digitale Standortpolitik. Vom I×I zum 3×3.
<http://plattform-maerkte.de/wp-content/uploads/2015/02/Kompendium-Digitale-Standortpolitik-2013.pdf>.
- BDA – BUNDESVEREINIGUNG DER DEUTSCHEN ARBEITGEBERVERBÄNDE (2015): Chancen der Digitalisierung nutzen. Positionspapier. Confederation of German Employers' Associations, Berlin.
- BDA – BUNDESVEREINIGUNG DER DEUTSCHEN ARBEITGEBERVERBÄNDE (2017): Arbeitszeitgesetz.
www.arbeitgeber.de/www/arbeitgeber.nsf/id/DE_Arbeitszeitgesetz.
- BDA – BUNDESVEREINIGUNG DER DEUTSCHEN ARBEITGEBERVERBÄNDE; BDI – BUNDESVERBAND DER DEUTSCHEN INDUSTRIE; DIHK – DEUTSCHER INDUSTRIE- UND HANDELSKAMMERTAG; ZDH – ZENTRALVERBAND DES DEUTSCHEN HANDWERKS (2016): Gemeinsame Erklärung zum Münchener Spitzengespräch am 26. Februar 2016.
http://bdi.eu/media/user_upload/02_26_Gem__Erklaerung_Spitzengespraech_2016__002_.pdf.
- BDI – BUNDESVERBAND DER DEUTSCHEN INDUSTRIE (2016): Produktivitätswachstum in Deutschland. Wege aus der Sackgasse. Industriepolitik Dossier, November 2016.
http://english.bdi.eu/media/user_upload/20161104_Industriepolitik_Dossier_Produktivitaetswachstum_in_Deutschland.pdf.
- BEHRINGER, JAN; THEOBALD, THOMAS; VAN TREECK, TILL (2016): Ungleichheit und makroökonomische Instabilität. Eine Bestandsaufnahme. Friedrich Ebert Foundation, Bonn.
<http://library.fes.de/pdf-files/wiso/12690.pdf>.
- BEISE, MARC; SCHÄFER, ULRICH (2016): Deutschland digital: Unsere Antwort auf das Silicon Valley. Campus Verlag, Frankfurt.
- BENNER, CHRISTIANE (2015): Amazonisierung oder Humanisierung der Arbeit durch Crowdsourcing? Gewerkschaftliche Perspektive in einer digitalen Arbeitswelt. In: BENNER, CHRISTIANE (ed.): Crowdwork – Zurück in die Zukunft? Perspektiven digitaler Arbeit. Bund Verlag, Frankfurt, pp. 289–302.
- BENNER, CHRISTIANE (2015): Crowdwork – Zurück in die Zukunft? Perspektiven digitaler Arbeit. Bund Verlag, Frankfurt.
- BERTELSMANN STIFTUNG (2015): Bedeutung der Arbeit. Ein Kooperationsprojekt von GfK Verein und Bertelsmann Stiftung, Ergebnisse der Befragung. Gütersloh.
www.bertelsmann-stiftung.de/fileadmin/files/user_upload/Bedeutung_der_Arbeit_final_151002_korr.pdf.

- BIBB – BUNDESINSTITUT FÜR BERUFSBILDUNG (2016):** Datenreport zum Berufsbildungsbericht 2016. Informationen und Analysen zur Entwicklung der beruflichen Bildung. Federal Institut for Vocational Education and Training, Bonn.
www.bibb.de/dokumente/pdf/bibb_datenreport_2016.pdf.
- BISPINCK, REINHARD (2016):** Arbeitszeit – Was bietet der tarifvertragliche Instrumentenkoffer? Eine Analyse von 23 Branchen und Tarifbereichen. Elemente qualitativer Tarifpolitik No. 82. Hans Böckler Foundation, Düsseldorf.
www.boeckler.de/pdf/p_ta_elemente_82_2016.pdf.
- BITKOM (2015):** Digitale Souveränität. Positionsbestimmung und erste Handlungsempfehlungen für Deutschland und Europa. Bitkom, Berlin.
- BITKOM RESEARCH (2016):** Neue Arbeit – wie die Digitalisierung unsere Jobs verändert. Bitkom, Berlin.
www.bitkom.org/NP-Themen/NP-Standort-Deutschland/Bildung-Arbeit/Neue-Arbeit/Bitkom-Charts-PK-Neue-Arbeit-30-06-2016.pdf.
- BLÄSCHE, ALEXANDRA; BRANDHERM, RUTH; ECKHARDT, CHRISTOPH; KÄPPLINGER, BERND; KNUTH, MATTHIAS; KRUPPE, THOMAS; KUHNHENNE, MICHAELA; SCHÜTT, PETRA (2017):** Qualitätsoffensive strukturierte Weiterbildung in Deutschland. Working Paper Forschungsförderung No. 25, February 2017. Hans Böckler Foundation, Düsseldorf.
www.boeckler.de/pdf/p_fofoe_WP_025_2017.pdf.
- BMAS – FEDERAL MINISTRY OF LABOUR AND SOCIAL AFFAIRS (2015):** Monitor. Mobiles und entgrenztes Arbeiten. Aktuelle Ergebnisse einer Betriebs- und Beschäftigtenbefragung.
www.bmas.de/SharedDocs/Downloads/DE/PDF-Publikationen/a873.pdf?__blob=publicationFile&v=2.
- BMAS – FEDERAL MINISTRY OF LABOUR AND SOCIAL AFFAIRS (2016a):** Lebenslagen in Deutschland. Armuts- und Reichtumsberichterstattung der Bundesregierung. Forschungsprojekt Wahrnehmung von Armut und Reichtum in Deutschland. Ergebnisse der repräsentativen Bevölkerungsbefragung »ARB-Survey 2015«.
www.armuts-und-reichtumsbericht.de/SharedDocs/Downloads/Service/Studien/forschungsprojekt-wahrnehmung-armut-reichtum.pdf?__blob=publication-File&v=3.
- BMAS – FEDERAL MINISTRY OF LABOUR AND SOCIAL AFFAIRS (2016b):** Weißbuch. Arbeiten 4.0. Arbeit weiter denken. Diskussionsentwurf. Federal Ministry of Labour and Social Affairs, Berlin.
www.bmas.de/SharedDocs/Downloads/DE/PDF-Publikationen/a883-weissbuch.pdf?__blob=publicationFile&v=8.
- BMAS – FEDERAL MINISTRY OF LABOUR AND SOCIAL AFFAIRS; NEXTPRACTICE (2016):** Wertewelten Arbeiten 4.0. Federal Ministry of Labour and Social Affairs, Berlin.
www.bmas.de/SharedDocs/Downloads/DE/PDF-Publikationen/Forschungsberichte/wertewelten-arbeiten-vier-null.pdf;jsessionid=020EAEF16758D85C2B21AF45436145D4?__blob=publicationFile&v=2.
- BMAS – FEDERAL MINISTRY OF LABOUR AND SOCIAL AFFAIRS; ZEW – CENTRE FOR EUROPEAN ECONOMIC RESEARCH (2015):** Übertragung der Studie von Frey / Osborne (2013) auf Deutschland. Forschungsbericht No. 455. Federal Ministry of Labour and Social Affairs, Berlin.
www.bmas.de/SharedDocs/Downloads/DE/PDF-Publikationen/Forschungsberichte/fb-455.pdf?__blob=publicationFile&v=2.
- BMBF – BUNDESMINISTERIUM FÜR BILDUNG UND FORSCHUNG (2015):** Weiterbildungsverhalten in Deutschland 2014. Ergebnisse des Adult Education Survey – AES Trendbericht 2014. Federal Ministry of Education and Research, Bonn.
www.bmbf.de/pub/Weiterbildungsverhalten_in_Deutschland_2014.pdf.

- BMBF – BUNDESMINISTERIUM FÜR BILDUNG UND FORSCHUNG (2016):** Berufsbildungsbericht 2016. Federal Ministry of Education and Research, Bonn.
www.bmbf.de/pub/Berufsbildungsbericht_2016.pdf.
- BMBF – BUNDESMINISTERIUM FÜR BILDUNG UND FORSCHUNG (2017):** Berufsbildungsbericht 2017. Federal Ministry of Education and Research, Bonn.
www.bmbf.de/pub/Berufsbildungsbericht_2017.pdf.
- BME – BUNDESVERBAND MATERIALWIRTSCHAFT, EINKAUF UND LOGISTIK E.V. (2016):** Mittelstand schöpft Potenziale der Digitalisierung nicht aus. August 18, 2016.
www.bme.de/mittelstand-schoepft-potenziale-der-digitalisierung-nicht-aus-1707/.
- BMFSFJ – BUNDESMINISTERIUM FÜR FAMILIE, SENIOREN, FRAUEN UND JUGEND (2006):** Familie zwischen Flexibilität und Verlässlichkeit. Perspektiven für eine lebenslaufbezogene Familienpolitik. Siebter Familienbericht. Publication 16/1360. Federal Ministry for Family Affairs, Senior Citizens, Women and Youth, Berlin.
www.bmfsfj.de/blob/76276/4cb5b103e693dacd4c014648d906aa99/7--familienbericht-data.pdf.
- BMFSFJ – BUNDESMINISTERIUM FÜR FAMILIE, SENIOREN, FRAUEN UND JUGEND (2012):** Zeit für Familie. Familienzeitpolitik als Chance einer nachhaltigen Familienpolitik. Achter Familienbericht. Publication 17/9000. Federal Ministry for Family Affairs, Senior Citizens, Women and Youth, Berlin.
www.bmfsfj.de/blob/76278/b8a3571f0b33e9d4152d410c1a7db6ee/achter-familienbericht-data.pdf.
- BMWI – BUNDESMINISTERIUM FÜR WIRTSCHAFT UND ENERGIE (2017):** Initiative Kultur- und Kreativwirtschaft der Bundesregierung.
www.kultur-kreativ-wirtschaft.de/KuK/Navigation/kultur-kreativwirtschaft.html.
- BMWI – BUNDESMINISTERIUM FÜR WIRTSCHAFT UND ENERGIE (2016):** Wege zu mehr öffentlichen Investitionen mit einer Infrastrukturgesellschaft – Gutachten gibt Diskussionsanreize. Monthly report 12/2016.
www.bmwi.de/Redaktion/DE/Downloads/Monatsbericht/MonatsberichtThemen/12-2016-wege-zu-mehr-oeffentlichen-investitionen-mit-einer-infrastrukturgesellschaft-gutachten-gibt-diskussionsanreize.pdf?__blob=publicationFile&v=8.
- BOES, ANDREAS (2017):** Qualifizieren für das Arbeiten im globalen Informationsraum. In: WSI-Mitteilungen, 2/2017, pp. 155–157.
- BOES, ANDREAS; KÄMPF, TOBIAS; LANGES, BARBARA; LÜHR, THOMAS (2014):** Informatisierung und neue Entwicklungstendenzen von Arbeit. In: Arbeits- und Industrie soziologische Studien, volume 7, 1/2014, pp. 5–23.
- BOES, ANDREAS; KÄMPF, TOBIAS; LANGES, BARBARA; LÜHR, THOMAS (2015):** Landnahme im Informationsraum. Neukonstituierung gesellschaftlicher Arbeit in der »digitalen Gesellschaft«. In: WSI-Mitteilungen, 2/2015, pp. 77–85.
www.boeckler.de/wsimit_2015_02_boes.pdf.
- BOGAI, DIETER; CARSTENSEN, JEANETTE; SEIBERT, HOLGER; WIETHÖLTER, DORIS; HELL, STEFAN; LUDEWIG, OLIVER (2015):** Viel Varianz. Was man in den Pflegeberufen in Deutschland verdient. Studie des IAB im Auftrag der Bundesregierung für die Belange der Patientinnen und Patienten sowie Bevollmächtigter für Pflege.
www.patientenbeauftragter.de/images/pdf/2015-01-27_Studie_zu_den_Entgelten_der_Pflegeberufe.pdf.
- BÖNKE, TIMM; HARNACK, ASTRID (2017):** Ein Staatsfonds für Deutschland? Grundüberlegungen und internationale Vorbilder. Bertelsmann Foundation, Gütersloh.
www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/NW_Ein_Staatsfonds_fuer_Deutschland.pdf.

- BOOTH, TONY; AINSCOW, MEL; KINGSTON, DENISE (2006):** Index für Inklusion. Lernen, Partizipation und Spiel in der inklusiven Kindertageseinrichtung entwickeln. German edition. Original edition published by: Centre for Studies on Inclusive Education. German edition published by: Gewerkschaft Erziehung und Wissenschaft, Frankfurt. www.eenet.org.uk/resources/docs/Index%20EY%20German2.pdf.
- BORGER, KLAUS (2016):** Ausblick 2017: Deutschland fährt auf gutem Kurs in dichtes Nebelgebiet hinein. KfW-Konjunkturkompass Deutschland, November 30, 2016. www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-KfW-KonjunkturkompassKfW-Konjunkturkompass_2016-11.pdf.
- BORGGRÄFE, JULIA (2017):** Die Personalarbeit ist der Schlüssel zum Erfolg. Wirtschaftswoche, January 23, 2017. www.wiwo.de/erfolg/management-der-zukunft/hr-management-die-personalarbeit-ist-der-schlüssel-zum-erfolg/19258548.html.
- BOSCH, GERHARD (2010):** In Qualifizierung investieren – ein Weiterbildungsfonds für Deutschland. WISO Diskurs, December 2010. Friedrich Ebert Foundation, Bonn. <http://library.fes.de/pdf-files/wiso/07668.pdf>.
- BOSCH, GERHARD; BÄCKER, GERHARD; WEINKOPF, CLAUDIA (2011):** Vorschläge zur künftigen Arbeitsmarktpolitik: integrativ – investiv – innovativ. Gutachten für das Thüringer Ministerium für Wirtschaft, Arbeit und Technologie. www.sozialpolitik-aktuell.de/tl_files/sozialpolitik-aktuell/_Politikfelder/Arbeitsmarkt/Dokumente/IAQ_Gutachten_Auszug_Bewertung_Hartz_Gesetze.pdf.
- BOSCH, GERHARD; KALINA, THORSTEN (2015):** Die Mittelschicht in Deutschland unter Druck. IAQ-Report 4/2015. Institute for Skills, Work and Training, Duisburg. www.iaq.uni-due.de/iaq-report/2015/report2015-04.pdf.
- BOSCH, GERHARD; WEINKOPF, CLAUDIA (2014):** Wechselwirkungen zwischen Mindest- und Tariflöhnen. In: WSI-Mitteilungen, 6/2013, pp. 393–404. www.boeckler.de/wsimit_2013_06_bosch.pdf.
- BRAND, STEPHAN; STEINBRECHER, JOHANNES (2016):** Kommunalen Investitionsrückstand bei Schulgebäuden erschwert Bildungserfolge. KfW Research Fokus Volkswirtschaft No. 143, September 2016. www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-Fokus-Volkswirtschaft/Fokus-Nr.-143-September-2016-Investitionsr%C3%BCckstand-bei-Schulgeb%C3%A4uden.pdf.
- BRENKE, KARL (2016):** Arbeit am Wochenende greift nicht mehr weiter um sich. In: DIW Wochenbericht, 48/2016, pp. 1147–1155. www.diw.de/documents/publikationen/73/diw_01.c.547979.de/16-48-1.pdf.
- BRENKE, KARL; BEZDOSKA, MARTIN (2016):** Solo-Selbständige in Deutschland – Strukturen und Erwerbsverläufe. Forschungsbericht Nr. 465. Federal Ministry of Labour and Social Affairs, Berlin. www.bmas.de/SharedDocs/Downloads/DE/PDF-Publikationen/Forschungsberichte/f465-solo-selbstaendige.pdf?__blob=publicationFile&v=4.
- BRÜCKER, HERBERT (2013):** Auswirkungen der Einwanderung auf Arbeitsmarkt und Sozialstaat: Neue Erkenntnisse und Schlussfolgerungen für die Einwanderungspolitik. Bertelsmann Foundation, Gütersloh. <https://mediendienst-integration.de/fileadmin/Dateien/bertelsmann-bruecker-studie-einwanderung.pdf>.
- BRÜCKER, HERBERT; ROTHER, NINA; SCHUPP, JÜRGEN; BABKA VON GOSTOMSKI, CHRISTIAN; BÖHM, AXEL; FENDEL, TANJA; FRIEDRICH, MARTIN; GIESSELMANN, MARCO; KOSYAKOVA, YULIYA; KROH, MARTIN; KÜHNE, SIMON; LIEBAU, ELISABETH; RICHTER, DAVID; ROMITI, AGNESE; SCHACHT, DIANA; SCHEIBLE, JANA A.:**

- SCHMELZER, PAUL; SIEGERT, MANUEL; SIRRIES, STEFFEN; TRÜBSWETTER, PARVATI; VALLIZADEH, EHSAN (2016): IAB-BAMF-SOEP-Befragung von Geflüchteten. Flucht, Ankunft in Deutschland und erste Schritte der Integration. Kurzanalyse 5/2016. Migration, Integration and Asylum Research Centre of the Federal Office for Migration and Refugees, Nuremberg.
www.bamf.de/SharedDocs/Anlagen/DE/Publikationen/Kurzanalysen/kurzanalyses_iab-bamf-soep-befragung-gefluechtete.pdf;jsessionid=40C0C49E6988BD91BBAB9CB462BF9E75.1_cid368?__blob=publicationFile.
- BRUSSIG, MARTIN; MILL, ULRICH; ZINK, LINA (2013): Wege zur Anerkennung – Wege zur Integration? Inanspruchnahme und Ergebnisse von Beratung zur Anerkennung von im Ausland erworbenen Berufsabschlüssen. IAQ-Report 5/2013. Institute for Skills, Work and Training, Duisburg.
www.iaq.uni-due.de/iaq-report/2013/report2013-05.pdf.
- BRYNJOLFSSON, ERIK; MCAFEE, ANDREW (2011): Race against the Machine. How the Digital Revolution is Accelerating Innovation, Driving Productivity, and Irreversibly Transforming Employment and the Economy. Digital Frontier Press, Lexington, Mass.
- BRYNJOLFSSON, ERIK; MCAFEE, ANDREW (2012): Big Data: The Management Revolution. In: Harvard Business Review, October 2012, pp. 1–9.
- BRYNJOLFSSON, ERIK; MCAFEE, ANDREW (2014): The Second Machine Age – Work, Progress, and Prosperity in a Time of Brilliant Technologies. W. W. Norton and Company Ltd, New York und London.
- BRYSOON, ALEX; JOHN FORTH; LUCY STOKES (2015): Does worker wellbeing affect workplace performance? IZA Discussion Paper No. 9096. IZA Institute of Labor Economics, Bonn.
<http://ftp.iza.org/dp9096.pdf>.
- BUDE, HEINZ; STAAB, PHILIPP (eds.) (2016): Kapitalismus und Ungleichheit. Die neuen Verwerfungen. Campus Verlag, Frankfurt und New York.
- BUHR, DANIEL (2015a): Industrie 4.0. Neue Aufgaben für die Innovationspolitik. WISO direkt, April 2015. Friedrich Ebert Foundation, Bonn.
<http://library.fes.de/pdf-files/wiso/11303.pdf>.
- BUHR, DANIEL (2015b): Soziale Innovationspolitik für die Industrie 4.0. WISO Diskurs, April 2015. Friedrich Ebert Foundation, Bonn.
<http://library.fes.de/pdf-files/wiso/11302.pdf>.
- BUNDESREGIERUNG (2017): Lebenslagen in Deutschland. Der Fünfte Armuts- und Reichtumsbericht der Bundesregierung.
www.armuts-und-reichtumsbericht.de/SharedDocs/Downloads/Berichte/5-arb-langfassung.pdf;jsessionid=81B26DB18897761A74BE6C751B2CB8B4?__blob=publicationFile&cv=2.
- BUNDESVERFASSUNGSGERICHT (1983): Ruling. December 15, 1983. Az. 1 BvR 209/83, 1 BvR 484/83, 1 BvR 440/83, 1 BvR 420/83, 1 BvR 362/83, 1 BvR 269/83.
<https://openjur.de/u/268440.html>.
- CARITAS (2016): Zahl der Schulabgänger ohne Abschluss steigt leicht.
www.caritas.de/fuerprofis/fachthemen/kinderundjugendliche/bildungschancen/zahl-der-schulabgaenger-ohne-abschluss-s.
- CASTEL, ROBERT (2000): Die Metamorphose der sozialen Frage. Eine Chronik der Lohnarbeit. UVK Verlagsgesellschaft, Konstanz.
- CASTEL, ROBERT (2011): Die Krise der Arbeit. Neue Unsicherheiten und die Zukunft des Individuums. Hamburger Edition, Hamburg.
- CASTEL, ROBERT; DÖRRE, KLAUS (eds.) (2009): Prekarität, Abstieg, Ausgrenzung: Die soziale Frage am Beginn des 21. Jahrhunderts. Campus Verlag, Frankfurt and New York.

- CHETTY, RAY (2016): The Association Between Income and Life Expectancy in the United States, 2001–2014. In: *Journal of the American Medical Association*, volume 315, 16/2016, pp. 1750–1766.
- CHRISTENSEN, CLAYTON M. (1997): *The Innovator's Dilemma. The Revolutionary Book That Will Change The Way You Do Business.* HarperBusiness Edition, New York.
- CORNELL UNIVERSITY; INSEAD; WIPO (2016): *The Global Innovation Index 2016: Winning with Global Innovation.* Ithaca, Fontainebleau and Geneva.
www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2016.pdf.
- CRARY, JONATHAN (2014): 24/7: Schlaflos im Spätkapitalismus. Verlag Klaus Wagenbach, Berlin.
- DAK – DEUTSCHE ANGESTELLTEN-KRANKENKASSE (2015a): *Pflege-Report 2015. So pflegt Deutschland.*
www.dak.de/dak/download/pflegereport-2015-1701160.pdf.
- DAK – DEUTSCHE ANGESTELLTEN-KRANKENKASSE (2015b): *Psychoreport 2015. Deutschland braucht Therapie. Herausforderungen für die Versorgung.* DAK-Gesundheit, Hamburg.
www.dak.de/dak/download/psychoreport-2015-deutschland-braucht-therapie-1718790.pdf.
- DAK – DEUTSCHE ANGESTELLTEN-KRANKENKASSE (2016): *DAK-Gesundheitsreport 2016. Schwerpunktthema: Gender und Gesundheit.* DAK-Gesundheit, Hamburg.
www.dak.de/dak/download/gesundheitsreport-2016--warum-frauen-und-maenner-anders-krank-sind-1782660.pdf.
- DÄUBLER, WOLFGANG; KLEBE, THOMAS (2015): *Crowdwork: Die neue Form der Arbeit – Arbeitgeber auf der Flucht?* In: *Neue Zeitschrift für Arbeitsrecht*, 17/2015, pp. 1032–1041.
- DENGLER, KATHARINA; MATTHES, BRITTA (2015): *Folgen der Digitalisierung für die Arbeitswelt: Substituierbarkeitspotenziale von Berufen in Deutschland.* IAB-Forschungsbericht 11/2015. Institute for Employment Research, Federal Employment Agency, Nuremberg.
<http://doku.iab.de/forschungsbericht/2015/fb1115.pdf>.
- DEUTSCHE BUNDESBANK (2016): *Monthly report, March 2016, volume 68.*
www.bundesbank.de/Redaktion/DE/Downloads/Veroeffentlichungen/Monatsberichte/2016/2016_03_monatsbericht.pdf?__blob=publicationFile.
- DEUTSCHER BUNDESTAG (2004): *Expertenkommission »Finanzierung Lebenslangen Lernens« – Der Weg in die Zukunft.* Publication 15/3636. German Bundestag, Berlin.
<http://dip21.bundestag.de/dip21/btd/15/036/1503636.pdf>.
- DEUTSCHER BUNDESTAG (2013): *Schlussbericht der Enquete-Kommission »Wachstum, Wohlstand, Lebensqualität – Wege zu nachhaltigem Wirtschaften und gesellschaftlichem Fortschritt in der Sozialen Marktwirtschaft«.* Publication 17/13300. German Bundestag, Berlin.
<http://dip21.bundestag.de/dip21/btd/17/133/1713300.pdf>.
- DEUTSCHER BUNDESTAG (2014): *Bildungsgipfel-Bilanz 2014. Expertise DGB.*
www.bundestag.de/blob/374892/5cc5464897317e054bd5221b3bc6f7a0/vorlage_expertise-bildungsgipfel-data.pdf.
- DEUTSCHER BUNDESTAG (2015): *Rechtsfragen zum Crowdsourcing. Sachstand.* Wissenschaftliche Dienste, 6-3000-156/14. German Bundestag, Berlin.
www.bundestag.de/blob/406942/2aaf68d8454b9ac2accf79818b4b9809/wd-6-156-14-pdf-data.pdf.
- DEUTSCHE RENTENVERSICHERUNG (2016): *Ergebnisse auf einen Blick 2016.*
www.deutsche-rentenversicherung.de/cae/servlet/contentblob/238662/publicationFile/57446/ergebnisse_auf_einen_blick.pdf.

- DGB – INSTITUT DGB-INDEX GUTE ARBEIT (2014): DGB-Index Gute Arbeit. Der Report 2014, Supplementband. Wie die Beschäftigten die Arbeitsbedingungen in Deutschland beurteilen. Institute DGB-Index Gute Arbeit, Berlin.
- DGB – DEUTSCHER GEWERKSCHAFTSBUND (2016a): Mobilität in der Arbeitswelt. Immer mehr Pendler, immer größere Distanz. Arbeitsmarkt aktuell, 2/2016. www.dgb.de/themen/++co++2abea544-d19c-11e5-9018-52540023efia.
- DGB – INSTITUT DGB-INDEX GUTE ARBEIT (2016b): DGB-Index Gute Arbeit. Der Report 2016. Wie die Beschäftigten die Arbeitsbedingungen in Deutschland beurteilen. Institute DGB-Index Gute Arbeit, Berlin. www.dgb-bestellservice.de/besys_dgb/pdf/DGB501017.pdf.
- DGB – INSTITUT DGB-INDEX GUTE ARBEIT (2016c): Arbeiten ohne Ende. Wie verbreitet sind überlange Arbeitszeiten? DGB-Index Gute Arbeit Kompakt 1/2016. Berlin. <http://index-gute-arbeit.dgb.de/++co++b877f100-c4c8-11e5-94ef-52540023efia>.
- DGRV – DEUTSCHER GENOSSENSCHAFTS- UND RAIFFEISENVERBAND E. V. (2017a): Genossenschaften in Deutschland. www.genossenschaften.de/raiffeisen-genossenschaften.
- DGRV – DEUTSCHER GENOSSENSCHAFTS- UND RAIFFEISENVERBAND E. V. (2017b): Zahlen und Fakten. www.dgrv.de/de/ueberuns/zahlenfakten.html.
- DIE ZEIT; INFAS; WZB (2016): Das Vermächtnis. Die Welt, die wir erleben wollen. Die große Studie von Die Zeit, Infas, WZB. Zeitverlag Gerd Bucerius, Hamburg. www.wzb.eu/sites/default/files/u8/vermaechtnis-studie_broschuere_druckversion.pdf.
- DIEFENBACHER, HANS; HELD, BENJAMIN; RODENHÄUSER, DOROTHEE; ZIESCHANK, ROLAND (2016): Aktualisierung des Nationalen Wohlfahrtsindex 2.0 für Deutschland 1991–2012. Umweltbundesamt, Dessau. www.umweltbundesamt.de/sites/default/files/medien/378/publikationen/texte_29_2016_aktualisierung_und_methodische_ueberarbeitung_des_nationalen_wohlfahrtsind.pdf.
- DIETZ, MARTIN; OSIANDER, CHRISTOPHER (2014): Weiterbildung bei Arbeitslosen. Finanzielle Aspekte sind nicht zu unterschätzen. IAB-Kurzbericht 14/2014. Institute for Employment Research, Federal Employment Agency, Nuremberg. <http://doku.iab.de/kurzber/2014/kb1414.pdf>.
- DIEZ, WILLI (2016): Spreu und Weizen. Welche KMU-Automobilzulieferer schaffen einen Strukturwandel, welche nicht? Expertenstudie von Management Partner und dem Institut für Automobilwirtschaft. Institut für Automobilwirtschaft, Geislingen.
- DIW – DEUTSCHES INSTITUT FÜR WIRTSCHAFTSFORSCHUNG (2016): Home Office. DIW Wochenbericht, 5/2016. Berlin. www.diw.de/documents/publikationen/73/diw_o1.c.526036.de/16-5.pdf.
- DÖRRE, KLAUS (2015): Digitalisierung – neue Prosperität oder Vertiefung gesellschaftlicher Spaltungen? In: HIRSCH-KREINSEN, HARTMUT; ITTERMANN, PETER; NIEHAUS, JONATHAN (eds.): Digitalisierung industrieller Arbeit. Die Vision Industrie 4.0 und ihre sozialen Herausforderungen. Nomos Verlag, Baden-Baden, pp. 270–285.
- DRAGANO, NICO; WAHRENDORF, MORTEN; MÜLLER, KATHRIN; LUNAU, THORSTEN (2016): Arbeit und gesundheitliche Ungleichheit. Die ungleiche Verteilung von Arbeitsbelastungen in Deutschland und Europa. In: Bundesgesundheitsblatt Gesundheitsforschung, Gesundheitsschutz, volume 59, issue 2, pp. 217–227.
- DULLIEN, SEBASTIAN; VAN TREECK, TILL (2012): Ziele und Zielkonflikte der Wirtschaftspolitik und Ansätze für einen neuen sozial-ökologischen Regulierungsrahmen. WISO Diskurs, November 2012. Friedrich Ebert Foundation, Bonn. <http://library.fes.de/pdf-files/wiso/09442.pdf>.

- DUNKEL, WOLFGANG; KRATZER, NICK (2016): Zeit- und Leistungsdruck bei Wissens- und Interaktionsarbeit. Neue Steuerungsformen und subjektive Praxis. Nomos Verlag, Baden-Baden.
- EFI – EXPERTENKOMMISSION FORSCHUNG UND INNOVATION (2015): Gutachten zu Forschung, Innovation und technologischer Leistungsfähigkeit Deutschlands 2015. Expert Commission on Research and Innovation, Berlin.
www.e-fi.de/fileadmin/Gutachten_2015/EFI_Gutachten_2015.pdf.
- EICHHORST, WERNER; HINTE, HOLGER; SPERMANN, ALEXANDER; ZIMMERMANN, KLAUS F. (2015): Die neue Beweglichkeit: Die Gewerkschaften in der digitalen Arbeitswelt. IZA Standpunkte Nr. 82, August 2015. IZA Institute of Labor Economics, Bonn.
<http://ftp.iza.org/sp82.pdf>.
- EICHHORST, WERNER; STEPHAN, GESINE; STRUCK, OLAF (2017): Struktur und Ausgleich des Arbeitsmarktes. Working Paper Forschungsförderung Nr. 28, February 2017. Hans Böckler Foundation, Düsseldorf.
www.boeckler.de/pdf/p_fofoe_WP_o28_2017.pdf.
- ELLGUTH, PETER; TRINCZEK, RAINER (2016): Erosion der betrieblichen Mitbestimmung – Welche Rolle spielt der Strukturwandel? In: WSI-Mitteilungen, 3/2016, pp. 172–182.
www.boeckler.de/wsi-mitteilungen_64427_64462.htm.
- ERHARD, LUDWIG (1957): Wohlstand für Alle. Econ-Verlag, Düsseldorf.
- EUCKEN, WALTER (1952/2014): Grundsätze der Wirtschaftspolitik. UTB, Tübingen.
- EUROFOUND (2015): New forms of employment.
www.eurofound.europa.eu/sites/default/files/ef_publication/field_ef_document/ef1461en.pdf.
- EUROSTAT (2016): Durchschnittliche Wochenarbeitszeit von Vollzeitbeschäftigten in den Ländern der Europäischen Union (EU-28) im Jahr 2015 (in Stunden). Statista.
<https://de.statista.com/statistik/daten/studie/75864/umfrage/durchschnittliche-wochenarbeitszeit-in-den-laendern-der-eu/>.
- FELBERMAYR, GABRIEL; BAUMGARTEN, DANIEL; LEHWALD, SYBILLE (2014): Wachsende Lohnungleichheit in Deutschland. Welche Rolle spielt der internationale Handel? Bertelsmann Foundation, Gütersloh.
www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/Studie_Wachsende_Lohnungleichheit_Langfassung.pdf.
- FISCHER, GABRIELE; GUNDERT, STEFANIE; KAWALEC, SANDRA; SOWA, FRANK; STEGMAIER, JENS; TESCHING, KARIN; THEUER, STEFAN; HOHENDANNER, CHRISTIAN; LIETZMANN, THORSTEN (2015): Situation atypisch Beschäftigter und Arbeitszeitwünsche von Teilzeitbeschäftigten. Quantitative und qualitative Erhebung sowie begleitende Forschung. Final report. Research project by the Institute for Skills, Work and Training, commissioned by the Federal Ministry of Labour and Social Affairs.
http://doku.iab.de/grauepap/2015/Forschungsprojekt_Atypik_V2_35.pdf.
- FORD, SIMON; DESPEISSE, MÉLANIE (2016): Additive manufacturing and sustainability: an exploratory study of the advantages and challenges. In: Journal of Cleaner Production, 137/2016, pp. 1573–1587.
- FOROUTAN, NAIKA; GIESECKE, JOHANNES; KARAKAYALI, SERHAT (2017, forthcoming): Mitglieder mit Migrationshintergrund in der IG Metall. Berlin Institute for Integration and Migration Research and IG Metall, Berlin.
- FRANK, ELKE; HÜBSCHEN, THORSTEN (2015): Out of Office. Warum wir die Arbeit neu erfinden müssen. Redline Verlag, Munich.
- FRATZSCHER, MARCEL (2016): Verteilungskampf. Warum Deutschland immer ungleicher wird. Hanser-Verlag, Munich.

- FREY, CARL BENEDIKT; OSBORNE, MICHAEL A. (2013): The future of Employment: How susceptible are jobs to computerisation? Oxford Martin School, Oxford. www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf.
- FUCHS, JOHANN; HUMMEL, MARKUS; HUTTER, CHRISTIAN; GEHRKE, BRITTA; WANGER, SUSANNE; WEBER, ENZO; WEIGAND, ROLAND; ZIKA, GERD (2016): IAB-Prognose 2016. Beschäftigung und Arbeitskräfteangebot so hoch wie nie. IAB-Kurzbericht 6/2016. Institute for Employment Research, Federal Employment Agency, Nuremberg. <http://doku.iab.de/kurzber/2016/kb0616.pdf>.
- FUCHS, JOHANN; HUMMEL, MARKUS; HUTTER, CHRISTIAN; KLINGER, SABINE; WANGER, SUSANNE; WEBER, ENZO; ZIKA, GERD (2017): IAB-Prognose 2017. Der Arbeitsmarkt stellt neue Rekorde auf. IAB Kurzbericht 9/2017. Institute for Employment Research, Federal Employment Agency, Nuremberg. <http://doku.iab.de/kurzber/2017/kb0917.pdf>.
- GEBLER, ANTON; UITERKAMP, J.M. SCHOOT; VISSER, CINDY (2014): A global sustainability perspective on 3D printing technologies. In: *Energy Policy*, volume 74, pp. 158–167.
- GERSEMANN, OLAF; BIRGER, NICOLEI (2016): Post-Chef will die Arbeit von Robotern besteuern. In: *Die Welt*, July 10, 2016. www.welt.de/wirtschaft/articler56922755/Post-Chef-will-die-Arbeit-von-Robotern-besteuern.html.
- GOEBEL, MICHAEL; GIESECKE, JOHANNES (2009): Ökonomische Unsicherheit und Fertilität. Die Wirkung von Beschäftigungsunsicherheit und Arbeitslosigkeit auf die Familiengründung in Ost- und Westdeutschland. In: *Zeitschrift für Soziologie*, volume 38, 5/2009, pp. 399–417.
- GOLDSCHMIDT, ULRICH (2016): Warum 40 Jahre Mitbestimmung ein Grund zum Feiern ist. www.manager-magazin.de/politik/deutschland/40-jahre-mitbestimmung-in-deutschland-a-1100169.html.
- GRABKA, MARKUS M.; GOEBEL, JAN (2017): Realeinkommen sind von 1991 bis 2014 im Durchschnitt gestiegen – erste Anzeichen für wieder zunehmende Einkommensungleichheit. In: *DIW Wochenbericht*, 4/2017, pp. 71–82. www.diw.de/documents/publikationen/73/diw_01.c.550894.de/17-4-1.pdf.
- GRABKA, MARKUS M.; TIEFENSEE, ANITA (2017, forthcoming): Das Erbvolumen in Deutschland dürfte vermutlich gut ein Viertel größer sein als bisher angenommen. In: *DIW Wochenbericht*.
- GRAETZ, GEORG; MICHAELS, GUY (2015): *Robots at Work*. CEP Discussion Paper No. 1335. Centre for Economic Performance, London. <http://cep.lse.ac.uk/pubs/download/dp1335.pdf>.
- HANDRICH, CHRISTOPH; KOCH-FALKENBERG, CAROLYN; VOSS, GÜNTER G. (2016): *Professioneller Umgang mit Zeit- und Leistungsdruck*. Nomos Verlag, Baden-Baden.
- HASSEL, ANKE; STEEN-KNUDSEN, JETTE; WAGNER, BETTINA (2016): Winning the battle or losing the war: The impact of European Union integration on labour market institutions in Germany and Denmark. In: *Journal of European Public Policy*, volume 23, issue 8, pp. 1218–1239.
- HBS (2016): Fortschritt braucht Kooperation. Böckler Impuls 15/2016. Hans Böckler Foundation, Düsseldorf, p. 7. www.boeckler.de/Boeckler-Impuls_2016_15_Gesamtausgabe.pdf.
- HEAD, JENNY; MARTIKAINEN, PEKKA; KUMARI, MEENA; KUPER, HANNAH; MARMOT, MICHAEL (2002): *Work environment, alcohol consumption and ill-health. The Whitehall II Study*. Prepared by University College London for the Health and Safety Executive. Health and Safety Executive, Norwich. www.hse.gov.uk/research/crr_pdf/2002/crr02422.pdf.

- HEIDEN, MATHIAS; JÜRGENS, KERSTIN (2013): Kräfte messen. Betriebe und Beschäftigte im Reproduktionskonflikt. edition sigma, Berlin.
- HELLIGE, HANS DIETER (2006): Die Geschichte des Internet als Lernprozess. artec-paper Nr. 138. artec Forschungszentrum Nachhaltigkeit, Bremen.
www.uni-bremen.de/fileadmin/user_upload/single_sites/artec/artec_Dokumente/artec-paper/138_paper.pdf.
- HERZOG-STEIN, ALEXANDER; FRIEDRICH, BIRGIT; SESSELMEIER, WERNER; STEIN, URLIKE (2017): Wachstum und Produktivität im Gegenwind: Eine Analyse der Argumente Robert Gordons im Spiegel der deutschen Produktivitätsschwäche. IMK Report No. 124, March 2017. Hans Böckler Foundation, Düsseldorf.
www.boeckler.de/pdf/p_imk_report_124_2017.pdf.
- HEXEL, DIETMAR (2009): Never change a winning system. Erfolg durch Mitbestimmung. In: HEXEL, DIETMAR (ed.): Never change a winning system. Erfolg durch Mitbestimmung. Schüren Verlag, Marburg, pp. 7–15.
- HINTE, HOLGER; RINNE, ULF; ZIMMERMANN, KLAUS F. (2015): Flüchtlinge in Deutschland: Realismus statt Illusion. IZA Standpunkte Nr. 83, September 2015. IZA Institute of Labor Economics, Bonn.
<http://ftp.iza.org/sp83.pdf>.
- HIRSCH-KREINSEN, HARTMUT; ITTERMANN, PETER; NIEHAUS, JONATHAN (eds.) (2015): Digitalisierung industrieller Arbeit. Die Vision Industrie 4.0 und ihre sozialen Herausforderungen. Nomos Verlag, Baden-Baden.
- HOBLER, DIETMAR; PFAHL, SVENJA; WEEBER, SONJA (2016): Arbeitszeiten. Teilleistungsquoten der abhängig Beschäftigten 1991–2014. WSI-GenderDatenPortal.
www.boeckler.de/wsi985.htm.
- HOFFMANN, REINER (2015): Gute Arbeit, Arbeitsgestaltung, Arbeitsforschung auf die Agenda setzen. In: SCHRÖDER, LOTHAR; URBAN, HANS-JÜRGEN (eds.): Gute Arbeit. Campus Verlag, Frankfurt and New York. pp. 19–27.
- HOFFMANN, REINER; BOGEDAN, CLAUDIA (2015) (eds.): Arbeit der Zukunft. Möglichkeiten nutzen – Grenzen setzen. Campus Verlag, Frankfurt and New York.
- HOFMANN, JÖRG; KURZ, CONSTANZE (2016): Industrie 4.0 – Industriearbeit der Zukunft im digitalen Wandel. In: SCHRÖDER/URBAN (eds.): Gute Arbeit, Ausgabe 2015. Campus Verlag, Frankfurt and New York, pp. 73–85.
- HOFSTETTER, YVONNE (2016): Das Ende der Demokratie. Wie die künstliche Intelligenz die Politik übernimmt und uns entmündigt. C. Bertelsmann Verlag, Munich.
- HOHENDANNER, CHRISTIAN; RAMOS LOBATO, PHILIPP; OSTMEIER, ESTHER (2016): Befristete Beschäftigung im öffentlichen Dienst. Öffentliche Arbeitgeber befristen häufiger und kündigen seltener als private. IAB-Kurzbericht 5/2016. Institute for Employment Research, Federal Employment Agency Nuremberg.
<http://doku.iab.de/kurzber/2016/kb0516.pdf>.
- HÖHNE, JUTTA; SCHULZE-BUSCHOFF, KARIN (2015): Die Arbeitsmarktintegration von Migranten und Migrantinnen in Deutschland. Ein Überblick nach Herkunftsländern und Generationen. In: WSI-Mitteilungen 5/2015, pp. 345–354.
www.boeckler.de/wsimit_2015_05_hoehne.pdf.
- HORN, GUSTAV (2011): Des Reichtums fette Beute. Wie die Ungleichheit unser Land ruiniert. Campus Verlag, Frankfurt and New York.
- HORN, GUSTAV; BEHRINGER, JAN; HERZOG-STEIN, ALEXANDER; HOHLFELD, PETER; RIETZLER, KATJA; STEPHAN, SABINE; THEOBALD, THOMAS; TOBER, SILKE (2016a): Deutsche Konjunktur robust in rauem Klima. IMK Report No. 113, April 2016. Hans Böckler Foundation, Düsseldorf.
www.boeckler.de/pdf/p_imk_report_113_2016.pdf.

- HORN, GUSTAV; HERZOG-STEIN, ALEXANDER; RIETZLER, KATJA; TOBER, SILKE; WATT, ANDREW (2016b): Die Zukunft gestalten. Wirtschaftspolitische Herausforderungen 2016. IMK Report No. III, January 2016. Hans Böckler Foundation, Düsseldorf. www.boeckler.de/pdf/p_imk_report_III_2016.pdf.
- HORN, GUSTAV; HERZOG-STEIN, ALEXANDER; RIETZLER, KATJA; TOBER, SILKE (2017): Die Zukunft gestalten. Wirtschaftspolitische Herausforderungen 2017. IMK Report No. 120, January 2017. Hans Böckler Foundation, Düsseldorf. www.boeckler.de/pdf/p_imk_report_120_2017.pdf.
- HÜTHER, MICHAEL (2016): Digitalisierung: Systematisierung der Trends im Strukturwandel – Gestaltungsaufgabe für die Wirtschaftspolitik. IW Policy Paper 15/2016. Cologne Institute for Economic Research, Cologne. www.iwkoeln.de/_storage/asset/317423/storage/master/file/11351046/download/IW_policy_paper_2016_15_Digitalisierung.pdf.
- HURRELMANN, KLAUS; ALBRECHT, ERIK (2014): Die heimlichen Revolutionäre. Wie die Generation Y unsere Welt verändert. Beltz Verlag, Weinheim and Basel.
- HUWS, URSULA (2016): Platform Labour: Sharing Economy or Virtual Wild West? In: Journal for a Progressive Economy, July 2016, pp. 24–27.
- IFO – LEIBNIZ-INSTITUT FÜR WIRTSCHAFTSFORSCHUNG (2017): ifo Konjunkturperspektiven, volume 44, 3/2017. Leibniz Institute for Economic Research, Munich. www.cesifo-group.de/DocDL/KT_ifoKP_2017_03.pdf.
- IG METALL – INDUSTRIEGEWERKSCHAFT METALL (2015): Betriebsräte-Befragung Werkverträge 2015. Press handout, September 1, 2015. Berlin. www.igmetall.de/docs/v2_2015_09_01_Werkvertraege_Befragungsergebnisse_Presse_fa3aa79650424adb92215f0d963c327c16c17469.pdf.
- IG METALL – INDUSTRIEGEWERKSCHAFT METALL (no year): FairCrowdWork Watch. Homepage. www.faircrowdwork.org/.
- IRANI, LILY; SILBERMAN, MAX (2013): Turkopticon: Interrupting Worker Invisibility in Amazon Mechanical Turk. Proceedings of the SIGCHI Conference on Human Factors in Computing Systems. ACM Publications, New York, pp. 611–620. <http://dl.acm.org/citation.cfm?id=2470742>.
- IW KÖLN – INSTITUT DER DEUTSCHEN WIRTSCHAFT KÖLN (2014): Bildungsverlierer Kurzstudie auf Basis des Sozio-oekonomischen Panels und PISA-Daten. Kurztgutachten im Auftrag der Initiative Neue Soziale Marktwirtschaft. Initiative Neue Soziale Marktwirtschaft, Berlin. www.insm.de/insm/dms/insm/text/kampagne/chancen-fuer-alle/fruehstuecksdialog-iw-studie-bildungsverlierer/iw-kurzstudie-bildungsverlierer/IW%20Kurzstudie%20Bildungsverlierer.pdf.
- IW KÖLN – INSTITUT DER DEUTSCHEN WIRTSCHAFT KÖLN (2016): Jeder Dritte wechselt den Job. Iwd kompakt, May 9, 2016. www.iwd.de/artikel/jeder-dritte-wechselt-den-job-281979/.
- JIRJAHN, UWE (2011): Ökonomische Wirkungen der Mitbestimmung in Deutschland: Ein Update. In: Schmollers Jahrbuch, volume 131, issue 1, pp. 3–57. www.beck-shop.de/fachbuch/leseprobe/Leseprobe_schm.pdf.
- JOEBGES, HEIKE (2014): Zur Problematik der deutschen Leistungsbilanzüberschüsse. In: WISO direkt, June 2014. Friedrich Ebert Foundation, Bonn. <http://library.fes.de/pdf-files/wiso/10823.pdf>.
- JÜRGENS, KERSTIN (2015): Zusammenhänge anerkennen: Für eine Neuordnung von Arbeit und Leben. In: HOFFMANN, REINER; BOGEDAN, CLAUDIA (eds.): Arbeit der Zukunft. Möglichkeiten nutzen – Grenzen setzen. Campus Verlag, Frankfurt and New York, pp. 289–310.

- JÜRGENS, KERSTIN; FEHR, SONJA (2016): Familie und Beruf: zwischen Zeit- und Geldknappheit. Alte und neue Herausforderungen einer gesellschaftspolitischen Schlüsselfrage. In: ARBEITNEHMERKAMMER BREMEN (ed.): Mehr Vereinbarkeit wagen! Arbeiterkammer Bremen, Bremen, pp. 12–29.
www.arbeitnehmerkammer.de/fileadmin/user_upload/Downloads/Jaehrliche_Publikationen/Sozialbericht_2016.pdf
- KATZ, CHRISTIAN; BAITSCH, CHRISTOF (1996): Lohngleichheit für die Praxis: zwei Instrumente zur geschlechtsunabhängigen Arbeitsbewertung. vdf, Zürich.
- KEESE, CHRISTOPH (2016): Silicon Valley. Wie wir die digitale Transformation schaffen. Kanus Verlag, Munich.
- KERSTEN, JENS; NEU, CLAUDIA; VOGEL, BERTHOLD (2015): Regionale Daseinsvorsorge. Begriff, Indikatoren, Gemeinschaftsaufgabe. WISO Diskurs, January 2015. Friedrich Ebert Foundation, Bonn.
<http://library.fes.de/pdf-files/wiso/11182.pdf>
- KERSTEN, JENS; NEU, CLAUDIA; VOGEL, BERTHOLD (2016): Der Wert gleicher Lebensverhältnisse. Friedrich Ebert Foundation, Bonn.
<http://library.fes.de/pdf-files/wiso/121016.pdf>
- KERSTEN, JENS; NEU, CLAUDIA; VOGEL, BERTHOLD (2017): Das Soziale-Orte-Konzept. Ein Beitrag zur Politik des sozialen Zusammenhalts. In: Umwelt- und Planungsrecht, 2/2017, pp. 50–56.
- KFW RESEARCH (2016): KfW-Kommunalpanel 2016. KfW Group, Frankfurt.
www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-KfW-Kommunalpanel/KfW-Kommunalpanel-2016.pdf
- KITTUR, ANIKET; BERNSTEIN, MICHAEL S.; GERBER, ELISABETH M.; SHAW, AARON; ZIMMERMAN, JOHN; LEASE, MATTHEW; HORTON, JOHN J. (2015): Die Zukunft der Crowdarbeit. In: BENNER, CHRISTIANE (ed.): Crowdwork – zurück in die Zukunft? Perspektiven digitaler Arbeit. Bund Verlag, Frankfurt, pp. 173–230.
- KLEBE, THOMAS (2016): Crowdwork erfordert zusätzliche Regeln. In: Frankfurter Rundschau, May 19, 2015.
www.fr.de/politik/meinung/gastbeitraege/gastbeitrag-crowdwork-erfordert-zusaetzliche-regeln-a-352537
- KLENNER, CHRISTINA; LOTT, YVONNE (2016): Arbeitszeitoptionen im Lebensverlauf. Bedingungen und Barrieren ihrer Nutzung im Betrieb. WSI Study Nr. 4, August 2016. Hans Böckler Foundation, Düsseldorf.
www.boeckler.de/pdf/p_wsi_studies_4_2016.pdf
- KNIEPS, FRANZ; PFAFF, HOLGER (eds.) (2015): BKK Gesundheitsreport 2015 – Langzeiterkrankungen. Zahlen, Daten, Fakten. Medizinisch Wissenschaftliche Verlagsgesellschaft, Berlin.
www.bkk-dachverband.de/fileadmin/publikationen/gesundheitsreport_2015/BKK_Gesundheitsreport_2015.pdf
- KOCHER, EVA; WELTI, FELIX (2013): Wie lässt sich ein Anspruch auf Weiterbildung rechtlich gestalten? Rechtliche Instrumente im Arbeits- und Sozialrecht. Friedrich Ebert Foundation, Bonn.
<http://library.fes.de/pdf-files/wiso/09665.pdf>
- KORTE, KARL-RUDOLF (2017): Identitätsfragen als neue demokratische Herausforderung des Politikmanagements. In: BIEBER, CHRISTOPH; BLÄTTE, ANDREAS; KORTE, KARL-RUDOLF; SWITEK, NIKO (eds.): Regieren in der Einwanderungsgesellschaft. Impulse zur Integrationsdebatte aus Sicht der Regierungsforschung. Springer VS, Wiesbaden, pp. 9–18.
- KRATZER, NICK; MENZ, WOLFGANG; TULLIUS, KNUT; WOLF, HARALD (2015): Legitimationsprobleme in der Erwerbsarbeit. Gerechtigkeitsansprüche und

- Handlungsorientierungen in Arbeit und Betrieb. Forschung aus der Hans Böckler Foundation No. 173, edition sigma, Baden-Baden.
- KRETSCHMER, MARTIN (2011): Private Copying and Fair Compensation: An empirical study of copyright levies in Europe. The Intellectual Property Office, Newport. www.ipo.gov.uk/ipresearch-faircomp-full-20110.pdf.
- KRETSCHMER, MARTIN (2016): »Autoren sollten gesetzliche Vergütungsrechte begrüßen«. Interview with Martin Kretschmer, conducted on June 5, 2016. <https://irights.info/artikel/martin-kretschmer-autoren-sollten-gesetzliche-verguetungsrechte-begruessen/27620>.
- KRUGMAN, PAUL (2014): Four observations on secular stagnation. In: BALDWIN, RICHARD; TEULINGS, COEN (eds.): *Secular Stagnation: Facts, Causes and Cures*. CEPR Press, London, pp. 61–68.
- KUCKLICK, CHRISTOPH (2014): *Die granulare Gesellschaft. Wie das Digitale unsere Wirklichkeit auflöst*. Ullstein Verlag, Berlin.
- KUEK, SIOU CHEW; PARADI-GUILFORD, CECILIA; FAYOMI, TOKS; IMAIZUMI, SAORI; IPEIROTIS, PANOS; PINA, PATRICIA; SINGH, MANPREET (2015): *The Global Opportunity in Online Outsourcing*. World Bank, Washington. <http://documents.worldbank.org/curated/en/13837146800900555/pdf/ACS14228-ESW-white-cover-P149016-Box391478B-PUBLIC-World-Bank-Global-OO-Study-WB-Rpt-FinalS.pdf>.
- KURI, JÜRGEN (2017): Digitale Infrastruktur. Zwischen Fördermilliarden und Netzrealitäten. In: *Aus Politik und Zeitgeschichte*, 16–17/2017, pp. 24–30. www.bpb.de/apuz/246427/digitale-infrastruktur-zwischen-foerdermilliarden-und-netzrealitaeten.
- KURZ, CONSTANZE; RIEGER, FRANK (2013): *Arbeitsfrei. Eine Entdeckungsreise zu den Maschinen, die uns ersetzen*. Riemann Verlag, Munich.
- LANDMANN, JULIANE; HEUMANN, STEFAN (eds.) (2016): *Auf dem Weg zum Arbeitsmarkt 4.0. Mögliche Auswirkungen der Digitalisierung auf Arbeit und Beschäftigung in Deutschland bis 2030*. Bertelsmann Foundation and Stiftung Neue Verantwortung, Gütersloh and Berlin. www.bertelsmann-stiftung.de/fileadmin/files/user_upload/Studie_NW_Arbeitsmarkt4.0.pdf.
- LANG, THORSTEN; BÄHR, CORNELIUS; FRITSCH, MANUEL (2016): *Internationale Wissensnetze. Studie im Auftrag der Hans-Böckler-Stiftung*. IW Consult, Cologne. www.iwkoeln.de/_storage/asset/305532/storage/master/file/10669848/download/Gutachen_2016_IW_Consult_Internationale_Wissensnetze.pdf.
- LEGGWIE, CLAUS (2011): *Mut statt Wut. Aufbruch in eine neue Demokratie*. Körber Foundation, Hamburg.
- LEIMEISTER, JAN MARCO; DURWARD, DAVID; ZOGAJ, SHKODRAN (2016): *Crowd Worker in Deutschland. Eine empirische Studie zum Arbeitsumfeld auf externen Crowdsourcing-Plattformen*. Study Nr. 323, July 2016. Hans Böckler Foundation, Düsseldorf. www.boeckler.de/pdf/p_study_hbs_323.pdf.
- LEIMEISTER, JAN MARCO; ZOGAJ, SHKODRAN (2013): *Neue Arbeitsorganisation durch Crowdsourcing. Eine Literaturstudie*. Arbeitspapier Nr. 287. Hans Böckler Foundation, Düsseldorf. www.boeckler.de/pdf/p_arbp_287.pdf.
- LESSENICH, STEPHAN (2008): *Die Neuerfindung des Sozialen. Der Sozialstaat im flexiblen Kapitalismus*. Transcript, Bielefeld.
- LESSIG, LAWRENCE (2008). *Remix: Making Art and Commerce Thrive in the Hybrid Economy*. Penguin, New York.

- LILLEMEIER, SARAH (2016): Der »Comparable Worth-Index« als Instrument zur Analyse des Gender Pay Gaps. Arbeitsanforderungen und Belastungen in Frauen- und Männerberufen. WSI Working Paper Nr. 205, October 2016. Hans Böckler Foundation, Düsseldorf.
www.boeckler.de/pdf/p_wsi_wp_205.pdf.
- LILLIE, NATHAN; WAGNER, INES (2015): Subcontracting, insecurity and posted workers: evidence from construction, meat processing and shipbuilding. In: DRAHOKOUPIL, JAN (ed.): The outsourcing challenge: organizing workers across fragmented production networks. European Trade Union Institute, Brussels, pp. 157–177.
- LOKHANDE, MOHINI; NIESELT, THIMO (2016): Doppelt benachteiligt? Kinder und Jugendliche mit Migrationshintergrund im deutschen Bildungssystem. Eine Expertise im Auftrag der Stiftung Mercator. The Expert Council of German Foundations on Integration and Migration, Berlin.
www.stiftung-mercator.de/media/downloads/3_Publikationen/Expertise_Doppelt_benachteiligt.pdf.
- MAIER, TOBIAS; ZIKA, GERD; WOLTER, MARC INGO; KALINOWSKI, MICHAEL; NEUBER-POHL, CAROLINE (2016): Die Bevölkerung wächst – Engpässe bei fachlichen Tätigkeiten bleiben aber dennoch bestehen. BIBB-IAB-Qualifikations- und Berufsfeldprojektionen bis zum Jahr 2035 unter Berücksichtigung der Zuwanderung Geflüchteter. BIBB-Report, 3/2016. Federal Institut for Vocational Education and Training, Bonn.
- MARMOT, M. G.; DAVEY SMITH, G.; STANSFELD, S.; PATEL, C.; HEAD, J.; NORTH, F.; WHITE, I. (1991): Health inequalities among British civil servants: the Whitehall II study. In: *The Lancet*, volume 337, pp. 1387–1393.
- MASCHKE, MANUELA; NIES, GERD; VOGL, GERLINDE (2014): Mobile Arbeit: zwischen Autonomie und Fremdbestimmung. In: WSI-Mitteilungen, 2/2014, pp. 156–159.
www.boeckler.de/wsimit_2014_02_maschke.pdf.
- MASON, PAUL (2016): Postkapitalismus. Grundrisse einer kommenden Ökonomie. Suhrkamp Verlag, Berlin.
- MAU, STEFFEN (2015a): Der Lebenschancencredit. Ein Modell der Ziehungsrechte für Bildung, Zeitsouveränität und die Absicherung sozialer Risiken. WISO direkt, October 2015. Friedrich Ebert Foundation, Bonn.
<http://library.fes.de/pdf-files/wiso/11658.pdf>.
- MAU, STEFFEN (2015b): Die Rückkehr der sozialen Ungleichheit. In: *Berliner Republik*, 3–4/2015.
www.b-republik.de/archiv/die-rueckkehr-der-sozialen-ungleichheit.
- MAU, STEFFEN; HEUER, JAN-OCKO (2016): Wachsende Ungleichheit als Gefahr für nachhaltiges Wachstum. Wie die Bevölkerung über soziale Unterschiede denkt. Friedrich Ebert Foundation, Bonn.
<http://library.fes.de/pdf-files/wiso/12516.pdf>.
- MAZZUCATO, MARIANA (2014): Das Kapital des Staates. Eine andere Geschichte von Innovation und Wachstum. Verlag Antje Kunstmann, Munich.
- MAZZUCATO, MARIANA (2015): The entrepreneurial state: Debunking public vs. private sector myths. PublicAffairs Books, New York.
- MAZZUCATO, MARIANA (2016): From market fixing to market-creating: a new framework for innovation policy. In: *Industry and Innovation*, volume 23, 2/2016, pp. 140–156.
- MEISSNER, FRANK; VERTOVEC, STEVEN (2015): Comparing super-diversity. In: *Ethnic and Racial Studies*, volume 38, 4/2015, pp. 541–555.
- MÖLLER, JOACHIM (2016): Lohnungleichheit – Gibt es eine Trendwende? IAB-Discussion Paper 9/2016. Institute for Employment Research,

- Federal Employment Agency, Nuremberg.
<http://doku.iab.de/discussionpapers/2016/dp0916.pdf>.
- MOROZOV, EVGENY (2013): *Smarte neue Welt. Digitale Technik und die Freiheit des Menschen*. Karl Blessing Verlag, Munich.
- MÜCKENBERGER, ULRICH (1989): *Der Wandel des Normalarbeitsverhältnisses unter Bedingungen einer »Krise der Normalität«*. In: *Gewerkschaftliche Monatshefte*, 4/1989, pp. 211–223.
<http://library.fes.de/gmh/main/pdf-files/gmh/1989/1989-04-a-211.pdf>.
- MÜCKENBERGER, ULRICH (ed.) (1998): *Zeiten der Stadt. Reflexionen und Materialien zu einem neuen gesellschaftspolitischen Gestaltungsfeld*. edition Temmen, Bremen.
- MÜCKENBERGER, ULRICH (2014): *Eine europäische Sozialverfassung?*
 In: *Europarecht*, volume 49, 4/2014, pp. 369–399.
www.europarecht.nomos.de/fileadmin/eur/doc/Aufsatz_EuR_14_04.pdf.
- MÜCKENBERGER, ULRICH (2015): *»Bürger am Arbeitsplatz«. Ein gewerkschafts- und gesellschaftspolitisches Leitbild*. In: SCHROEDER, WOLFGANG; BOGEDAN, CLAUDIA (eds.): *Gute Arbeit und soziale Gerechtigkeit im 21. Jahrhundert. Bausteine einer sozialen Arbeitsgesellschaft*. Forschung aus der Hans-Böckler-Stiftung No. 175. Nomos Verlag, Baden-Baden, pp. 52–89.
- MÜCKENBERGER, ULRICH (2017): *Der Arbeitnehmerbegriff. Expertise im Auftrag der Kommission »Arbeit der Zukunft«*. Hans Böckler Foundation, Düsseldorf.
- MÜLLER, ANDREA; SCHMIDT, WERNER (2016): *Fluchtmigration und Arbeitswelt. Maßnahmen zur Integration von Flüchtlingen in großen Unternehmen*. Study Nr. 339, October 2016. Hans Böckler Foundation, Düsseldorf.
www.boeckler.de/pdf/p_study_hbs_339.pdf.
- MÜLLER-ARMACK, ALFRED (1966): *Wirtschaftsordnung und Wirtschaftspolitik. Studien und Konzepte zur sozialen Marktwirtschaft und zur europäischen Integration*. Verlag Rombach, Freiburg.
- NAUMANN, INGELA K. (2014): *Access for All? Sozialinvestition in der frühkindlichen Bildung und Betreuung im europäischen Vergleich*. In: *Zeitschrift für Erziehungswissenschaften*, volume 17, 3/2014, supplement, pp. 113–128.
www.research.ed.ac.uk/portal/files/16420399/Access_for_All.pdf.
- NEHLICH, HELMA (2017): *Auf dem Rücken des Personals. An der Berliner Charité gibt es seit einem Jahr tarifliche Mindestbesetzungen in der Pflege, aber man hält sich nicht daran*. In: *ver.di Publik*, 3/2017, p. 6.
<http://publik.verdi.de/2017/ausgabe-03/gewerkschaft/gewerkschaft/seite-6/A1>.
- NEUMANN, MICHAEL; SCHMIDT, JÖRG (2013): *Glücksfaktor Arbeit – Was bestimmt unsere Lebenszufriedenheit? RHI-Diskussion Nr. 21*, Roman Herzog Institute, Munich.
www.romanherzoginstitut.de/publikationen/detail/gluecksfaktor-arbeit.html.
- NGG – GEWERKSCHAFT NAHRUNG-GENUSS-GASTSTÄTTEN (2012): *Wenig Rechte – wenig Lohn. Wie Unternehmen Werkverträge (aus)nutzen*. Gewerkschaft Nahrung, Genuss, Gaststätten, Hamburg.
www.ngg.net/fileadmin/medien/2015_2016/PDFs/Themen_und_Positionen-PDFs/wenig-rechte-broschuere-werkvertraege.pdf.
- OECD (2015): *In It Together: Why Less Inequality Benefits All*. OECD Publishing, Paris.
www.keepeek.com/Digital-Asset-Management/oecd/employment/in-it-together-why-less-inequality-benefits-all_9789264235120-en#.W0yYS2dCRhE.
- OECD – ORGANISATION FÜR WIRTSCHAFTLICHE ZUSAMMENARBEIT UND ENTWICKLUNG (2016a): *Bildung auf einen Blick 2016: OECD-Indikatoren*. W. Bertelsmann Verlag, Bielefeld.
<http://dx.doi.org/10.1787/9789264264212-de>.

- OECD – ORGANISATION FÜR WIRTSCHAFTLICHE ZUSAMMENARBEIT UND ENTWICKLUNG (2016b): PISA 2015 Results (Volume I): Excellence and Equity in Education. OECD Publishing, Paris.
<http://dx.doi.org/10.1787/9789264266490-en>.
- OHLIGER, RAINER (2014): Den demografischen Wandel durch Migration gestalten: Möglichkeiten, Grenzen, Zukunftsperspektiven. WISO direkt, December 2014. Friedrich Ebert Foundation, Bonn.
<http://library.fes.de/pdf-files/wiso/11095.pdf>.
- PABST, FRANZISKA; ASMUS, ANTJE (2017): Armut Alleinerziehender. In: DER PARITÄTISCHE GESAMTVERBAND (ed.): Menschenwürde ist Menschenrecht. Bericht zur Armutsentwicklung in Deutschland 2017, pp. 22–29.
<https://cloud.paritaet.org/1.1/?download=true&ticket=5661be40-fe94-1e6-be03-5254008b3c13>.
- PALLEY, THOMAS I. (2016): Inequality and Growth in Neo-Kaleckian and Cambridge Growth Theory. IMK Working Paper No. 167, May 2016. Hans Böckler Foundation, Düsseldorf.
www.boeckler.de/pdf/p_imk_wp_167_2016.pdf.
- PENNINX, RINUS; ROOSBLAD, JUDITH (2000): Trade Unions, Immigration and Immigrants in Europe 1960–1993. Berghahn Books, Oxford.
- PFEIFFER, SABINE (2016): Berufliche Bildung 4.0? Überlegungen zur Arbeitsmarkt- und Innovationsfähigkeit. In: Industrielle Beziehungen – Zeitschrift für Arbeit, Organisation und Management, volume 23, 1/2016, pp. 25–44.
- PFEIFFER, SABINE; SUPHAN, ANNE (2015): Der AV-Index. Lebendiges Arbeitsvermögen und Erfahrung als Ressourcen auf dem Weg zu Industrie 4.0. Working Paper 2015#1. University of Hohenheim.
www.sabine-pfeiffer.de/files/downloads/2015-Pfeiffer-Suphan-final.pdf.
- PIKETTY, THOMAS (2014): Das Kapital im 21. Jahrhundert. Verlag C. H. Beck, Munich.
- PONGRATZ, HANS J.; VOSS, G. GÜNTER (2003): Arbeitskraftunternehmer. Erwerbsorientierungen in entgrenzten Erwerbsformen. edition sigma, Berlin.
- PRASSL, JEREMIAS; RISAK, MARTIN (2016): Uber, Taskrabbit, & Co: Platforms as Employers? Rethinking the Legal Analysis of Crowdfork. In: Comparative Labor Law & Policy Journal, forthcoming. Pre-published online in February 2016:
www.labourlawresearch.net/sites/default/files/papers/15FEB%20Prassl_Risak%20Crowdfork%20Employer%20post%20review%20copy.pdf.
- PRIES, LUDGER (2016): Migration und Ankommen. Die Chancen der Flüchtlingsbewegung. Campus Verlag, Frankfurt and New York.
- PRIES, LUDGER; DASEK, ANDREA (2017): Das Verhältnis von Gewerkschaften zur Migration: Ambivalente Orientierungen zwischen Ablehnen, Ausblenden und Ernstnehmen. In: AIS Arbeits- und Industriesoziologische Studien, volume 10, 1/2017, pp. 39–56.
www.ais-studien.de/home/veroeffentlichungen-17/april.html.
- PRIES, LUDGER; SHINOZAKI, KYOKO (2015): Neue Migrationsdynamiken und Folgerungen für gewerkschaftliche Politiken. In: WSI-Mitteilungen, 5/2015, pp. 374–382.
www.boeckler.de/wsimit_2015_05_pries.pdf.
- PROGNOS AG (2016): Industriestandort Deutschland und Bayern 2030. Bavarian Industry Association, Munich.
www.prognos.com/uploads/tx_atwpubdb/20160919_Prognos_Studie_Industriestandort-Deutschland-und-Bayern-2030_final.pdf.
- PROJEKTGRUPPE GEMEINSCHAFTSDIAGNOSE (2017): Aufschwung festigt sich trotz weltwirtschaftlicher Risiken. Frühjahr 2016. Dienstleistungsauftrag des Bundesministeriums für Wirtschaft und Energie. Projektgruppe Gemeinschaftsdiagnose, Berlin.

- www.diw.de/documents/dokumentenarchiv/17/diw_o1.c.556111.de/20170412_gemeinschaftsdiagnose_fruehjhr2017_komplettgutachten.pdf.
- REICHERT, MONIKA (2013): Häusliche Pflege in Deutschland unter besonderer Berücksichtigung der Vereinbarkeit von Erwerbstätigkeit und Pflege. Presentation given on March 6, 2013, Philipps University Marburg.
- RESOURCE PROJECT (no year): Das ReSource Project. Homepage. www.resource-project.org/home.html.
- REUYSS, STEFAN; PFAHL, SVENJA; RINDERSPACHER, JÜRGEN P.; MENKE, KATRIN (2014): Pflegesensible Arbeitszeiten – Arbeitszeitrealitäten und Bedarfe von pflegenden Beschäftigten. Hans Böckler Foundation, Düsseldorf. www.boeckler.de/pdf/p_pflagesensible_arbeitszeiten.pdf.
- RICHTER, ACHIM; GELS, RAYMUND (2017): Betriebliches Eingliederungsmanagement. Fürsorgepflicht und Gesundheitsschutz im öffentlichen und kirchlichen Dienst. Walhalla Fachverlag, Regensburg.
- RIETZLER, KATJA (2014): Anhaltender Verfall der Infrastruktur. Die Lösung muss bei den Kommunen ansetzen. IMK Report No. 94, June 2014. Hans Böckler Foundation, Düsseldorf. www.boeckler.de/pdf/p_imk_report_94_2014.pdf.
- RIFKIN, JEREMY (1997): Das Ende der Arbeit und ihre Zukunft. Campus Verlag, Frankfurt and New York.
- RIFKIN, JEREMY (2014a): Die dritte industrielle Revolution. Die Zukunft der Wirtschaft nach dem Atomzeitalter. Fischer Verlag, Frankfurt.
- RIFKIN, JEREMY (2014b): Die Null-Grenzkosten-Gesellschaft: Das Internet der Dinge, kollaboratives Gemeingut und der Rückzug des Kapitalismus. Campus Verlag, Frankfurt and New York.
- ROGGENKAMP, MARTIN (2016): Trendanalyse – Berufliche Aus- und Weiterbildung in Deutschland. bwf – Unternehmen für Bildung, Erkrath. www.bfw.de/Media/Allgemeine_Dateien/News/bfw-Trendanalyse-Berufliche-Aus-und-Weiterbildung-2017-Auszug.pdf.
- RKI – ROBERT-KOCH-INSTITUT (ed.) (2017): Gesundheitliche Ungleichheit in verschiedenen Lebensphasen. Gesundheitsberichterstattung des Bundes gemeinsam getragen von RKI und Destatis. Robert Koch Institute, Berlin. www.rki.de/DE/Content/Gesundheitsmonitoring/Gesundheitsberichterstattung/GBEDownloadsB/gesundheitsliche_ungleichheit_lebensphasen.pdf?__blob=publicationFile.
- RÖHL, KLAUS HEINER (2016): Regionale Wirtschaftsstrukturen und Armutsgefährdung. IW-Kurzbericht 77/2016. Cologne Institute for Economic Research, Cologne. www.iwkoeln.de/studien/iw-kurzberichte/beitrag/klaus-heiner-roehl-regionale-wirtschaftsstrukturen-und-armutsgefahrdung-316272.
- ROLAND BERGER – ROLAND BERGER STRATEGY CONSULTANTS (2015): Die digitale Transformation der Industrie. Was sie bedeutet. Wer gewinnt. Was jetzt zu tun ist. Eine europäische Studie von Roland Berger Strategy Consultants im Auftrag des BDI. http://bdi.eu/media/user_upload/Digitale_Transformation.pdf.
- ROSSNAGEL, ALEXANDER (2016): Wie zukunftsfähig ist die Datenschutz-Grundverordnung? Welche Antworten bietet sie für die neuen Herausforderungen des Datenschutzrechts? In: Datenschutz und Datensicherheit, 9/2016, pp. 561–565.
- RUDZIO, KOLJA; VENOHR, SASCHA; BLICKLE, PAUL; STAHNKE, JULIAN (2016): Schwimmen Sie vorne mit? Zeit Online, February 25, 2016. www.zeit.de/wirtschaft/2016-02/arbeit-mindestlohn-erfolg-deutschland-studie-vermaechtnis.

- RÜRUP, BERT (2015): Säkulare Stagnation. Das trojanische Pferd des Keynesianismus. Handelsblatt Research Institute Analysis, May 29, 2015. http://research.handelsblatt.com/wp-content/uploads/2015/05/br_Stagnation.pdf.
- SACHVERSTÄNDIGENKOMMISSION – SACHVERSTÄNDIGENKOMMISSION ZUM ZWEITEN GLEICHSTELLUNGSBERICHT DER BUNDESREGIERUNG (2017): Erwerbs- und Sorgearbeit gemeinsam neu gestalten. Gutachten für den Zweiten Gleichstellungsbericht der Bundesregierung. Geschäftsstelle Zweiter Gleichstellungsbericht der Bundesregierung, Berlin. www.gleichstellungsbericht.de/gutachten2gleichstellungs-bericht.pdf.
- SACK, DETLEF; SCHULTEN, THORSTEN; SARTER, EVA; BÖHLKE, NILS (2016): Öffentliche Auftragsvergabe in Deutschland. Sozial und nachhaltig? Modernisierung des öffentlichen Sektors No. 41. Nomos Verlag, Baden-Baden.
- SATTELBERGER, THOMAS; WELPE, ISABELL; BOES, ANDREAS (2015): Das demokratische Unternehmen: Neue Arbeits- und Führungskulturen im Zeitalter digitaler Wirtschaft. Haufe-Lexware, Freiburg.
- SAUER, DIETER (2011): Von der »Humanisierung der Arbeit« zur »Guten Arbeit«. In: Aus Politik und Zeitgeschichte, 15/2011, pp. 18–23. www.bpb.de/apuz/33366/von-der-humanisierung-der-arbeit-zur-guten-arbeit?p=all.
- SAUER, DIETER (2013): Die organisatorische Revolution, Umbrüche der Arbeitswelt – Ursachen, Auswirkungen und arbeitspolitische Antworten. VSA-Verlag, Hamburg.
- SCHILDMANN, CHRISTINA (2016): Digitalisierung. Wie Frauen gewinnen können. Süddeutsche Zeitung, November 30, 2016. www.sueddeutsche.de/politik/digitalisierung-wie-frauen-gewinnen-koennen-1.3273324?reduced=true.
- SCHIRRMACHER, FRANK (ed.) (2015): Technologischer Totalitarismus. Eine Debatte. Suhrkamp Verlag, Berlin.
- SCHMID, GÜNTHER (2008): Von der Arbeitslosen- zur Beschäftigungsversicherung. WISO Diskurs, April 2008. Friedrich Ebert Foundation, Bonn. <http://library.fes.de/pdf-files/wiso/05295.pdf>.
- SCHMIDT, ERIC; COHEN, JARED (2013): Die Vernetzung der Welt. Ein Blick in unsere Zukunft. Rowohlt Verlag, Reinbek.
- SCHMIDT, WERNER; MÜLLER, ANDREA (2013): Social Integration and Workplace Industrial Relations: Migrant and Native Employees in German Industry. In: Relations Industrielles / Industrial Relations, volume 68, issue 3, pp. 361–386.
- SCHNEIDER, JAN; YEMANE, RUTA; WEINMANN, MARTIN (2014): Diskriminierung am Ausbildungsmarkt. Ausmaß, Ursachen und Handlungsperspektiven. The Expert Council of German Foundations on Integration and Migration, Berlin. www.bosch-stiftung.de/content/langaager/downloads/Studie_Diskriminierung_am_Ausbildungsmarkt.pdf.
- SCHOLZ, CHRISTIAN (2014): Generation Z. Wie sie tickt, was sie verändert und warum sie uns alle ansteckt. Wiley-VCH Verlag, Weinheim.
- SCHOLZ, TREBOR (2016a): Plattform-Kooperativismus. Wie wir uns die Sharing Economy zurückholen können. In: STARY, PATRICK (ed.): Digitalisierung der Arbeit. Arbeit 4.0, Sharing Economy und Plattform-Kooperativismus, Manuskripte Neue Folge No. 18. Rosa Luxemburg Foundation, Berlin, pp. 62–94. www.rosalux.de/fileadmin/rls_uploads/pdfs/Manuskripte/Manuskript8_Digitalisierung_der_Arbeit.pdf.
- SCHOLZ, TREBOR (2016b): Overworked and underpaid: How workers are disrupting the digital economy. Polity Press, Cambridge.

- SCHROEDER, WOLFGANG (2017a): »Eine neue Idee von Sozialpartnerschaft«. Interview.
In: Magazin Mitbestimmung, 10/2013.
www.boeckler.de/44324_44330.htm.
- SCHROEDER, WOLFGANG (2017b): Industrie 4.0 und der rheinische kooperative Kapitalismus. WISO direkt, 3/2017. Friedrich Ebert Foundation, Bonn.
<http://library.fes.de/pdf-files/wiso/13206.pdf>.
- SCHUH, GÜNTHER; GUDEGAN, GERHARD; KAMPKER, ACHIM (eds.) (2016):
Management industrieller Dienstleistungen: Handbuch Produktion und
Management 8. Springer-Verlag, Berlin and Heidelberg.
- SCHULZ, ERIKA (2012): Pflegemarkt: Drohendem Arbeitskräftemangel kann entgegen-
gewirkt werden. In: DIW Wochenbericht, 51–52/2012, pp. 3–17.
www.diw.de/documents/publikationen/73/diw_01.c.413133.de/12-51-1.pdf.
- SCHWAB, KLAUS (2016): Die vierte industrielle Revolution. Pantheon Verlag, Munich.
- SCHWEIGHOFER, JOHANNES (2016): Zur Befreiung des Menschen von mühevoller Arbeit
und Plage durch Maschinen, Roboter und Computer – Auswirkungen der
Digitalisierung auf die Arbeitsmärkte. In: Wirtschaft und Gesellschaft, volume 42,
2/2016, pp. 219–255.
http://wug.akwien.at/WUG_Archiv/2016_42_2/2016_42_2_0219.pdf.
- SCHWETTMANN, JÜRGEN (2012): Die Genossenschaft – Der Mensch im Mittelpunkt.
In: Gegenblende. Das gewerkschaftliche Debattenmagazin, 16/2012, pp. 11–14.
- SEIFERT, HARMUT; HOLST, ELKE; MATIASKE, WENZEL; TOBSCH, VERENA (2016):
Arbeitszeitwünsche und ihre kurzfristige Realisierung. In: WSI-Mitteilungen,
4/2016, pp. 300–308.
<http://media.boeckler.de/Sites/A/Online-Archiv/19052>.
- SIEGRIST, JOHANNES (2005): Medizinische Soziologie. 6., neu bearbeitete und erweiterte
Auflage. Elsevier/Urban & Fischer Verlag, Munich.
- SIEGRIST, JOHANNES (2015): Arbeitswelt und stressbedingte Erkrankungen:
Forschungsevidenz und präventive Maßnahmen. Elsevier/Urban & Fischer Verlag,
Munich.
- SOMMER, MICHAEL (2012): Gewerkschaften und Genossenschaften – Neue Wege im
21. Jahrhundert? In: Gegenblende. Das gewerkschaftliche Debattenmagazin, 16/2012,
pp. 8–11.
- STAAB, PHILIPP (2014): Macht und Herrschaft in der Servicewelt. Hamburg Edition,
Hamburg.
- STAAB, PHILIPP (2016): Falsche Versprechen. Wachstum im digitalen Kapitalismus.
Hamburg Edition, Hamburg.
- STATISTA (no year): Anteil der Beschäftigten im öffentlichen Dienst an der
Gesamtbeschäftigung in den OECD-Ländern im Jahr 2004 (in Prozent).
[https://de.statista.com/statistik/daten/studie/37720/umfrage/beschaeftigte-im-
oeffentlichen-dienst-in-oecd-laendern/](https://de.statista.com/statistik/daten/studie/37720/umfrage/beschaeftigte-im-oeffentlichen-dienst-in-oecd-laendern/).
- STATISTISCHES BUNDESAMT (2015a): Geerbt und geschenktes Vermögen im Jahr 2014
auf über 100 Milliarden Euro gestiegen. Press release 373/15, October 7, 2015.
Federal Statistical Office, Wiesbaden.
[www.destatis.de/DE/PresseService/Presse/Pressemitteilungen/2015/10/PD15_373_736.pdf?
__blob=publicationFile](http://www.destatis.de/DE/PresseService/Presse/Pressemitteilungen/2015/10/PD15_373_736.pdf?__blob=publicationFile).
- STATISTISCHES BUNDESAMT (2015b): Wie die Zeit vergeht. Ergebnisse zur Zeitverwendung
in Deutschland 2012/2013. Federal Statistical Office, Wiesbaden.
[www.destatis.de/DE/PresseService/Presse/Pressekonferenzen/2015/zeitverwendung/
Pressebrochure_zeitverwendung.pdf?__blob=publicationFile](http://www.destatis.de/DE/PresseService/Presse/Pressekonferenzen/2015/zeitverwendung/Pressebrochure_zeitverwendung.pdf?__blob=publicationFile).
- STATISTISCHES BUNDESAMT (2016a): Bruttoinlandsprodukt 2015 für Deutschland.
Federal Statistical Office, Wiesbaden.

- www.destatis.de/DE/PresseService/Presse/Pressekonferenzen/2016/BIP2015/Pressebrochure_BIP2015.pdf?__blob=publicationFile.
- STATISTISCHES BUNDESAMT (2016b): Ungenutztes Arbeitskräftepotenzial im Jahr 2015: 5,7 Millionen Menschen wollen (mehr) Arbeit. Press Release 338/16, September 23, 2016. Federal Statistical Office, Wiesbaden.
- www.destatis.de/DE/PresseService/Presse/Pressemitteilungen/2016/09/PD16_338_132.pdf.pdf;jsessionid=501CAD9220CCDADCA88B2777CD86D0DC.caer!__blob=publicationFile.
- STATISTISCHES BUNDESAMT (2016c): Verdienstunterschied zwischen Frauen und Männern in Deutschland bei 21%. Press Release 097/16, March 16, 2016. Federal Statistical Office, Wiesbaden.
- www.destatis.de/DE/PresseService/Presse/Pressemitteilungen/2016/03/PD16_097_621.pdf.pdf?__blob=publicationFile.
- STATISTISCHES BUNDESAMT (2016d): Volkswirtschaftliche Gesamtrechnung 2016. Federal Statistical Office, Wiesbaden.
- www.destatis.de/DE/ZahlenFakten/GesamtwirtschaftUmwelt/VGR/VolkswirtschaftlicheGesamtrechnungen.html.
- STATISTISCHES BUNDESAMT (2016e): 45% der Beschäftigten arbeiteten 2014 in tarifgebundenen Betrieben. Press Release 383/16, October 25, 2016. Federal Statistical Office, Wiesbaden.
- www.destatis.de/DE/PresseService/Presse/Pressemitteilungen/2016/10/PD16_383_622.pdf.pdf?__blob=publicationFile
- STATISTISCHES BUNDESAMT (2017a): Bevölkerung und Erwerbstätigkeit. Bevölkerung mit Migrationshintergrund – Ergebnisse des Mikrozensus 2015. Fachserie 1, Reihe 2.2.
- www.destatis.de/DE/Publikationen/Thematisch/Bevoelkerung/MigrationIntegration/Migrationshintergrund2010220157004.pdf?__blob=publicationFile.
- STATISTISCHES BUNDESAMT (2017b): Dauer der Beschäftigung beim aktuellen Arbeitgeber. Federal Statistical Office, Wiesbaden.
- www.destatis.de/DE/ZahlenFakten/Indikatoren/QualitaetArbeit/QualitaetDerArbeit.html?cms_gtp=318944_slot%0253D4
- STATISTISCHES BUNDESAMT (2017c): Gesundheitspersonal nach Berufen und Geschlecht in 1000. Federal Statistical Office, Wiesbaden.
- www.destatis.de/DE/ZahlenFakten/GesellschaftStaat/Gesundheit/Gesundheitspersonal/Tabellen/Berufe.html.
- STATISTISCHES BUNDESAMT (2017d): Zahlen und Fakten. Erwerbstätige, die mehr als eine Tätigkeit ausüben. Federal Statistical Office, Wiesbaden.
- www.destatis.de/DE/ZahlenFakten/GesamtwirtschaftUmwelt/Arbeitsmarkt/_Doorpage/Indikatoren_QualitaetDerArbeit.html?cms_gtp=318944_slot%0253D3.
- STIGLITZ, JOSEPH; SEN, AMARTYA; FITOUSSI, JEAN-PAUL (2010a): Report by the Commission on the Measurement of Economic Performance and Social Progress. http://library.bsl.org.au/jspui/bitstream/1/1267/1/Measurement_of_economic_performance_and_social_progress.pdf.
- STIGLITZ, JOSEPH; SEN, AMARTYA; FITOUSSI, JEAN-PAUL (2010b): Mismeasuring Our Lives. Why GDP Doesn't Add Up. The Report by the Commission on the Measurement of Economic Performance and Social Progress. The New Press, New York.
- SYDOW, JÖRG; HELFEN, MARKUS (2016): Production as a service. Plural network organization as a challenge for industrial realtions. Study. Friedrich Ebert Foundation, Berlin. <http://library.fes.de/pdf-files/iez/12903.pdf>.
- TURKLE, SHERRY (2015): Reclaiming Conversation. The Power of Talk in a Digital Age. Penguin, New York.

- UNHCR – UNITED NATIONS HIGH COMMISSIONER FOR REFUGEES (2016):
Global Trends. Forced Displacement in 2015. United Nations High Commissioner for Refugees, Genf.
www.unhcr.org/statistics/unhcrstats/576408cd7/unhcr-global-trends-2015.html
- VAN DER WEL, KJETIL A.; BAMBRA, CLARE; DRAGANO, NICO; EIKEMO, TERJE A.; LUNAU, THORSTEN (2015): Risk and resilience: health inequalities, working conditions and sickness benefit arrangements: Analysis from the 2010 European Working Conditions Survey. In: *Sociology of Health & Illness*, volume 37, 8/2015, pp. 1157–1172.
- VAN TREECK, TILL (2015): Inequality, the crisis, and stagnation. In: *European Journal of Economics and Economic Policies: Intervention*, volume 12, issue 2/2015, pp. 158–169.
- VER.DI – VEREINTE DIENSTLEISTUNGSGEWERKSCHAFT (no year): Ich bin mehr wert. Ver.di – Gewerkschaft auch für Cloudworker. Homepage.
www.ich-bin-mehr-wert.de/support/cloudworking/.
- VOGEL, BERTHOLD (2015): Wohlstandskonflikte! Anmerkungen zu den Folgen des demografischen Wandels für Gemeinsinn und sozialen Zusammenhalt. In: HERBERT-QUANDT-STIFTUNG (ed.): *Landflucht 3.0. Welche Zukunft hat der ländliche Raum? Sinclair-Haus-Gespräche No. 34*. Herder Verlag, Freiburg, pp. 34–44.
- WAGNER, BETTINA; HASSEL, ANKE (2017): Move to Work, Move to Stay? Mapping Atypical Labour Migration into Germany. In: DØLVIK, JON ERIK; ELDRING, LINE (eds.): *Labour Mobility in the Enlarged Single European Market. Comparative Social Research No. 32*. Emerald Group Publishing Limited, Bingley, pp. 125–158.
- WAGNER, INES (2015): Arbeitnehmerentsendung in der EU: Folgen für Arbeitsmarktintegration und soziale Sicherung. In: *WSI-Mitteilungen 5/2015*, pp. 338–344.
www.boeckler.de/wsimit_2015_05_wagner.pdf.
- WANGER, SUSANNE (2015): Traditionelle Erwerbs- und Arbeitszeitmuster sind nach wie vor verbreitet. Frauen und Männer am Arbeitsmarkt. IAB-Kurzbericht 4/2015. Institute for Employment Research, Federal Employment Agency, Nuremberg.
<http://doku.iab.de/kurzber/2015/kb0415.pdf>.
- WANGER, SUSANNE; WEBER, ENZO (2014): Arbeitszeitwünsche von Frauen und Männern 2012. Institute for Employment Research, Federal Employment Agency, Nuremberg.
<http://doku.iab.de/arbeitsmarktdaten/arbeitszeitwuensche.pdf>.
- WEBER, ENZO (2016): Schätzung der Zahl der für Flüchtlinge relevanten Arbeitsstellen. Aktuelle Berichte 12/2016. Institute for Employment Research, Federal Employment Agency, Nuremberg.
http://doku.iab.de/aktuell/2016/aktueller_bericht_1612.pdf.
- WEBER, ENZO; ELSTNER, STEFFEN; SCHMIDT, CHRISTOPH M.; FRITSCHKE, ULRICH; HARMS, PATRICK CHRISTIAN; KRÄMER, HAGEN; SAAM, MARIANNE; HARTWIG, JOCHEN (2017): Zeitgespräch. Schwaches Produktivitätswachstum – zyklisches oder strukturelles Phänomen? In: *Wirtschaftsdienst, Zeitschrift für Wirtschaftspolitik*, volume 97, 2/2017, pp. 83–102.
<http://archiv.wirtschaftsdienst.eu/jahr/2017/2/schwaches-produktivitaetswachstum-zyklisches-oder-strukturelles-phaenomen/>.
- WEICHSELBAUMER, DORIS (2016): Discrimination against Female Migrants Wearing Headscarves. IZA Discussion Paper Nr. 10217. IZA Institute of Labor Economics, Bonn.
<http://ftp.iza.org/dp10217.pdf>.
- WIFOR (2016): Der Einfluss der Digitalisierung auf die Arbeitskräftesituation in Deutschland. PricewaterhouseCoopers, Frankfurt.
www.pwc-wissen.de/pwc/de/shop/publikationen/Der+Einfluss+der+Digitalisierung/?card=19104.

- WOLTER, MARC INGO; MÖNNIG, ANKE; HUMMEL, MARKUS; WEBER, ENZO; ZIKA, GERD; HELMRICH, ROBERT; MAIER, TOBIAS; NEUBER-POHL, CAROLINE (2016): Wirtschaft 4.0 und die Folgen für Arbeitsmarkt und Ökonomie Szenario-Rechnungen im Rahmen der BIBB-IAB-Qualifikations- und Berufsfeldprojektionen. IAB Forschungsbericht 13/2016. Institute for Employment Research, Federal Employment Agency, Nuremberg. <http://doku.iab.de/forschungsbericht/2016/fb1316.pdf>.
- WORLD BANK GROUP (2016): World Development Report. Digital Dividends. The World Bank, Washington, D. C. <http://documents.worldbank.org/curated/en/896971468194972881/pdf/102725-PUB-Replacement-PUBLIC.pdf>.
- WSI VERTEILUNGSMONITOR (2016): Soziale Ungleichheit: Ausmaß, Entwicklung, Folgen. www.boeckler.de/pdf/wsi_ym_faqs_2016.pdf.
- ZIKA, GERD; MAIER, TOBIAS (eds.) (2015): Qualifikation und Beruf in Deutschlands Regionen bis 2030. Konzepte, Methoden und Ergebnisse der BIBB-IAB-Projektionen. IAB-Bibliothek No. 353. W. Bertelsmann Verlag, Bielefeld.
- ZIMMERMANN, VOLKER (2016): Digitalisierung im Mittelstand: Status quo, aktuelle Entwicklungen und Herausforderungen. KfW Research Fokus Volkswirtschaft Nr.138, August 2016. KfW Research, Frankfurt. www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-Fokus-Volkswirtschaft/Fokus-Nr.-138-August-2016-Digitalisierung.pdf.

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**THE WORLD OF WORK
WILL CHANGE FUNDAMENTALLY
IN THE COMING DECADES.**

What forces are at work in the labour market? What changes are to be expected? And what does this mean for the actors in labour market policy? This final report by the Work of the Future Commission, whose members included academics, practitioners and representatives from businesses and the trade unions, offers a diagnosis of the present situation and a range of views on the future of work. Above all, however, the Commission provides food for thought on how society might manage the whirlwind of change in such a way that work in the digital economy will guarantee everyone more than just their livelihood, namely social participation and prospects for the future.

