7. The German industrial relations system under pressure: Structure, trends and outcomes*

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1. INTRODUCTION

Although the social partners in Germany disagree about many topics – earnings, working time and job protection, to mention just a few – they share the opinion that both cooperation between social partners and social dialogue have been a success story. On 15 November 1918 the Stinnes-Legien Agreement was signed by the representatives of 21 employers' associations and seven unions: working conditions were henceforth to be regulated by means of collective agreements, and workers' committees (as a precursor of works councils) were introduced. The Stinnes-Legien Agreement was a template for the German collective bargaining law (Tarifvertragsgesetz) enacted on 9 April 1949, earlier than the founding of the Federal Republic of Germany.

Despite this positive assessment Germany was later regarded as the 'sick man of Europe' (for example, by *The Economist* on 3 June 1999), and researchers such as Wolfgang Streeck (2009) have diagnosed an exhaustion of the institutions of the post-war German economy, an erosion or the demise of the German industrial relations system (Hassel 1999; Addison et al. 2016, 2017). Although there are more than semantic differences between 'exhaustion' and 'erosion' the diagnoses are based on the same view that the main components of the German industrial relations system – such as collective agreements at both the sectoral and the firm level, works councils, membership and density of trade unions and of employers' associations – have been weakening over the past 20–30 years (Oberfichtner and Schnabel 2017). Furthermore, Haipeter (2013) and Schroeder (2016) diagnose a fragmentation of a formerly more uniform industrial relations system.

In Germany these components of the industrial relations system influence not only issues such as earnings, working time and job protection, but have extended their influence over, for example, vocational training and social security systems to a much larger degree than in most other countries (Silvia 2013). To assess the functioning of the German industrial relations system, focusing on the interplay of the social partners, the government and the social security bodies, our study provides an overview of the current debate in Germany about (1) the weathering of a possible economic crisis on the labour market, (2) the development of non-standard forms of employment and (3) the search for new strategies in the area of structural change and digitalization. Our focus is on the

interplay of state-level regulations and the industrial relations system. Thus, both the government and the social partners aim to address these challenges.

Despite some notable differences, the economic debate in Germany recently shows similarities to the debate in 2008 before the Great Recession began. With regard to the strategies to combat the most severe consequences of the crisis for the labour market, employers' associations and unions agreed that conventional Keynesian deficit spending would need too much time to avoid mass layoffs if the decline in the demand for products and services is expected to be large and long-lasting.

An updated and adjusted regulation that enabled the German Federal Employment Agency (FEA) to pay short-time work allowances was the solution at hand during the Great Recession of 2008–09. The regulation on short-time working was temporarily amended to prolong the maximum duration of this work, to combine the allowance with further training and to incorporate temporary agency work. This adoption proved to be very effective in respect of the number of employees working short-time during 2008–09 and the number of jobs saved. Many firms are obliged to increase the amount of state-financed short-time work allowance paid on the basis of sectoral agreements.

However, short-time working was not the only factor that inhibited the rise of unemployment and the decline of employment. Other factors included government intervention to stabilize financial markets and activation measures, the use of within-firm flexibility, working-time accounts and, most importantly, the conclusion of company-level pacts for employment and competitiveness. Their origin can be traced back to the introduction of opening clauses or hardship clauses in sectoral collective agreements in the 1980s, which allow management and works councils to deviate consensually and with the permission of the employers' association and union in order to avoid the consequences of an imminent crisis. Therefore, often new and less corporatist forms of collective bargaining emerged in manufacturing and, but to a smaller extent, in the service sector.

Furthermore, the social partners have extended their bargaining about wages, working time and further training, for example, to negotiate measures to save jobs and increase company competitiveness. These company-level agreements were generalized on the sectoral level; for example, in many sectors the social partners concluded sectoral level agreements on further training.

Meeting the challenges of a recession is not the only motivation for social partners to seek new strategies in response to structural change. The increased necessity of flexible employment, work–life balance and the growth of the low-wage sector, as well as increasing digitalization are further reasons. The latter topic has recently gathered the most attention. Issues to be discussed in conjunction with the digitalization of products and services, the integration of work processes and associated changes in work organization include wages, employment, non-standard types of work, working time, mobile work, training and health. Social partners have already agreed on some strategies to deal with these issues on both the company and the sectoral levels. The respective legalization not only provides a background for these agreements but is updated on the initiative of both the government and the social partners.

The relationship between regulation at state level and collective agreements differs in the various fields: in the 1980s fixed-term contracts were facilitated by the federal government in line with EU regulations. The rise of temporary agency work was fostered by

the Hartz reforms in 2005, before collective agreements concerning payment issues were concluded. New legislation require equal payment of the temporary and core workforce. In a sector-level agreement this condition can be suspended.

In contrast, minimum wages were settled in sectoral collective agreements, starting in 1997, and generalized by the government. A generally binding minimum wage was introduced by the Federal government on 1 January 2015. Until 2017 it was possible to suspend the generally binding minimum wage if a collective agreement existed. The law on minimum pay for apprentices restores this.

The interplay of the social partners, the government and the FEA is influenced by the proportion of companies that are members of employers' associations and the proportion of employees belonging to a union. The crucial question arises of how the declining trend here can be stopped or even reversed. Unions are attempting to reach out and extend membership to various groups, such as young people, women and temporary employees. Employers' associations are trying to systematically organize additional firms and those opting not to be covered by sectoral agreements. Furthermore, both social partners agree that advantageous strategies should be developed to address the challenges of the new world of work, such as the realization of work–life balance and digitalization. These challenges would be met by the simple extension of collective agreements in core industries to the remaining, increasingly heterogeneous part of the German labour market.

This chapter is organized as follows. Section 2 provides an overview of the development of the major components of the German industrial relations system. Section 3 presents the driving forces behind the specific patterns in both productivity and employment development in Germany's very successful reaction to the Great Recession in 2008–09. Section 4 is devoted to changes in forms of employment and the particular role of the government, as well as social partners. In Section 5, the challenges of the structural change caused by digitalization are discussed, in particular recent initiatives by collective agreements as well as firm-level policies. Section 6 includes two case studies referring to digitalization focusing on training, as well as the issue of working from home. Section 7 concludes.

2. RECENT TRENDS IN GERMAN INDUSTRIAL RELATIONS

2.1 Union and Employers' Association Membership

In this section, we present empirical evidence on the development of union and employers' association membership, the incidence of collective agreements and works councils.

From the 1960s, in western Germany, union membership increased from less than 8 million to almost 10 million in the 1980s followed by a spike after reunification to 14 million, before declining again to below 8 million (Schnabel 2019). According to Schulten (2019a, 2019b) union density – the proportion of employees who are organized in a union – steadily declined from 29.2 per cent in 1995 to 16.7 in 2017. He notes that, surprisingly, against this background, according to Eurobarometer 2018, approximately 77 per cent of the German population has a positive opinion of unions. His international comparison shows that the proportion of employees organized in unions may be

determined by the generalization of collective agreements to economic sectors, firms and employees not covered by membership in employers' associations and/or unions, unemployment insurance systems run by unions and employer chambers. He mentions that the metalworkers' union (IG Metall) has increased the number of its members by systematically organizing additional firms. He argues that the government can foster sectoral collective agreements by giving firms some privileges. This claim is not only opposed by the employers' associations. From a legal perspective, a privilege may also contradict the freedom to form a coalition, which is part of the German constitution.

Membership data from employers' associations are available only for the employers' federation in the metal and electrical industries (Gesamtmetall). Membership has fallen from over 75 per cent in the 1970s and 1980s in western Germany to 60–70 per cent after reunification (Schnabel 2019). The fall has been much more pronounced in eastern Germany, where the proportion of firms represented by an employers' association has plummeted to around 20 per cent. A large proportion of the members of the metal employers' association opted not to be covered by sectoral agreements. This applies to more than 50 per cent of the firms, comprising 23 per cent of the employees (Schulten 2019a, 2019b). Using data from an online survey conducted on behalf of the Institute of the German Economy (Institut der Deutschen Wirtschaft, IW), in 2017, among 1546 firms in the metal and electrical industries, Schneider (2019) finds that 88 per cent of firms concluded a sectoral bargaining agreement owing to tradition and the obligation to refrain from strikes. In contrast, this motive is mentioned by only 35 per cent of firms concluding firm-level agreements. Firms with sectoral agreements are less often satisfied with wages for their employees performing basic tasks (32 per cent) and working-time regulations (34 per cent), compared with those with firm-level agreements. Smaller firms tend to leave collective agreements more often than larger firms do. Those leaving collective agreements point to high and inflexible growth of negotiated wages, as well as turnover-related problems.

2.2 Collective Agreements

Empirical evidence on the incidence of sectoral collective agreements is provided by the IAB Establishment Panel survey (Fischer et al. 2009; Ellguth et al. 2014). According to recent analyses by Ellguth and Kohaut (2019a) – see Figure 7.1 – the proportion of employees covered by sectoral agreements fell from 70 per cent (in 1996) to 49 per cent (in 2018) in western Germany, and from 48 per cent (in 1996) to 28 per cent (in 2018) in eastern Germany. The picture for the private sector looks even bleaker. The incidence fell from 56 per cent (in 1996) to 35 per cent (in 2018) in western Germany, and from 48 per cent (in 1996) to 28 per cent (in 2018) in eastern Germany. Analyses of the proportion of establishments covered by sectoral agreements reveal much lower values but the same trends.

Some observers argue that the generalization of collective agreements to economic sectors, firms and employees not covered owing to membership in employers' associations, as well as firm-level collective agreements, have counteracted the decline of the sectoral trend. This is not the reality. According to the data provided by the Federal Ministry of Social Affairs the number of sectoral agreements being generalized decreased from 632 in 1995 to 444 in 2016 (with some ups and downs in between).

Another argument is that firm-level collective agreements substitute for sectoral agreements. However, Table 7.1 reveals that, according to the IAB Establishment Panel survey,

Figure 7.1 Sector-level collective agreements in Germany 1996–2018 (percentage of employees)

Table 7.1 Firm-level collective agreements, Germany, 1999–2018 (percentage of employees)

	Western Germany	Eastern Germany
1999	8	11
2001	8	12
2003	8	11
2005	8	11
2007	7	13
2009	9	13
2011	7	12
2013	8	12
2015	8	12
2017	8	11
2018	8	11

Source: Ellguth and Kohaut (2019a) based on weighted data from the IAB-Establishment Panel.

the proportion of employees covered by firm-level agreements has stagnated at around 8 per cent in western Germany and around 12 per cent in eastern Germany.

Table 7.2 demonstrates that the incidence of sectoral agreements differs according to size of establishment. Smaller establishments are less often bound to a sectoral agreement. Establishments with 50 employees or more are often covered by firm-level agreements. However, it is not only small and medium-sized establishments that often orientate themselves towards sectoral agreements. Interestingly, the differences between western and eastern Germany also persist among establishment size categories.

Table 7.2 Collective agreements and establishment size, Germany, 2018 (percentage of establishments)

Number of employees	Sectoral agreement		Firm-level agreement		No collective agreement at all			
	West	East	West	East	West	Orientation	East	Orientation
1–9	21	13	1	2	78	39	86	33
10–49	37	23	3	5	60	51	72	40
50–199	46	41	8	11	46	59	48	51
200–499	59	42	13	20	28	54	38	55
500+	67	54	13	22	20	53	24	48
Total	27	17	2	3	71	42	80	36

Source: Ellguth and Kohaut (2019a) based on weighted data from the IAB-Establishment Panel.

Note that the orientation of an establishment can have different meanings in practice. Oberfichtner and Schnabel (2017) show that orientation is as important in manufacturing as it is in the service sector, and it occurs in western Germany as often as in eastern Germany.

Works councils

Turning to the second pillar of the German industrial relations system, the works councils, Table 7.3 presents the development of the number of employees working in an establishment with a works council. The decline in western and eastern Germany has a similar magnitude, but at different levels. From the IAB Establishment Panel survey it can also be inferred that other plant-specific forms of employee representation, such as workforce spokespersons or round-tables, increased over time, particularly in eastern Germany and in manufacturing (Ertelt et al. 2017) (see Table 7.4).

2.3 Representation Gaps

To complete the analysis of the German industrial relations system, in Table 7.5 we present the interplay of binding collective agreements and the existence of works councils, as well as gaps in the representation of employees. Again the results are based on the IAB-Establishment Panel survey 2017. The proportion of employees in the core zone of the German industrial relations system, consisting of firms with both a works council and a sectoral agreement, amounts to 24 per cent in western Germany and 14 per cent in eastern Germany. Interestingly, in western German manufacturing this proportion is 41 per cent, but neither in the western German service sector (19 per cent) nor in the eastern German manufacturing sector (19 per cent) or the eastern German service sector (14 per cent) is such a figure reached. In contrast, 39 per cent of all employees in western Germany and 51 per cent of all employees in eastern Germany are employed in establishments without a collective agreement or a works council. Furthermore, 20 per cent of all employees in western Germany and 14 per cent in eastern Germany are employed in an establishment bound to a sectoral collective agreement but where no works council

Table 7.3 Works councils by firm size, Germany, 1993–2017 (percentage of employees)

	1–50 employees		51–500 employees		501 or more employees		Total	
	West	East	West	East	West	East	West	East
1993	12	–	74	–	95	–	51	–
1996	14	12	70	65	95	92	51	43
1998	12	11	69	63	95	93	50	40
2000	14	14	67	63	97	88	50	41
2001	13	14	68	63	97	90	50	41
2002	12	13	69	65	96	90	50	42
2003	11	12	67	64	94	89	48	40
2004	12	11	65	63	96	89	47	40
2005	12	12	64	61	92	90	47	40
2006	10	11	64	58	92	90	46	39
2007	10	12	63	58	92	89	46	39
2008	10	11	60	57	93	88	45	37
2009	10	13	61	55	92	91	45	38
2010	10	11	62	57	93	95	45	37
2011	10	11	61	57	92	92	44	36
2012	10	11	61	55	88	88	43	36
2013	9	10	59	53	91	90	43	35
2014	8	10	58	51	91	92	43	33
2015	9	9	56	52	89	87	42	33
2016	8	11	56	52	88	95	43	34
2017	9	11	53	48	85	90	40	33

Source: Ellguth (2018) based on weighted data from the IAB-Establishment Panel.

Table 7.4 Works councils and other forms of worker representation, Germany, 2004–15 (percentage of establishments covered, manufacturing and service sectors)

	Works councils		Other forms of worker representation	
	2004	2015	2004	2015
Germany	10.9	10.6	11.3	12.9
Western Germany	11.0	10.9	12.7	13.7
Eastern Germany	10.0	9.2	4.5	9.3
Manufacturing	9.2	9.2	9.5	12.5
Services	11.4	11.0	12.0	13.0
5–19 employees	4.6	4.6	9.9	11.6
20–99 employees	26.5	21.5	17.4	17.1
100–499 employees	69.3	62.0	12.3	15.8
500+ employees	92.6	87.6	12.7	17.5

Source: Ellguth and Kohaut (2019a) based on weighted data from the IAB-Establishment Panel.

exists. That means the institution responsible for monitoring the implementation of sectoral collective agreements is missing. Thus, Oberfichtner and Schnabel (2017) suggest that the German model currently resembles a Swiss cheese: solid from outside, but with many holes inside. The solid impression from the outside is based on, in 2017, 61 per cent of employees in western Germany and 49 per cent in eastern Germany still being represented by either a works council and/or a collective agreement. The proportion of employees covered by both collective bargaining and works councils has decreased substantially since the beginning of the 1990s in the private sector but not in the public sector.

Multivariate analyses by Oberfichtner and Schnabel (2017) reveal that establishments with both binding collective agreements and works councils are less likely in establishments managed by the owner, in single and foreign-owned establishments, in individually owned firms or partnerships, and in exporting establishments. Larger and older establishments exhibit higher coverage rates. Using a decomposition technique, Ellguth and Kohaut (2019b) demonstrate that the declining trend is owing to the increasing

Table 7.5 Collective agreements and works councils, Germany, 2017 (percentage of employees)

	Western Germany			Eastern Germany		
	Private	Manufacturing	Services	Private	Manufacturing	Services
Works council and sectoral collective agreement	24	41	19	14	19	14
Works council and firm-level collective agreement	7	12	5	8	11	9
Works council only	9	13	8	11	19	11
Sectoral collective agreement only	20	8	25	14	4	17
Firm-level collective agreement only	1	1	2	2	1	2
Neither collective agreement nor works council	39	26	42	51	46	46
Total	100	100	100	100	100	100
Employees in establishments with sectoral collective agreement	44	48	44	29	23	31
Employees in establishments with works council	40	66	31	33	49	35

Note: Only establishments with five or more employees.

Source: Ellguth (2018), based on weighted data from the IAB Establishment Panel.

importance of small and medium-sized establishments in the service sector. The falling rates of membership in unions and employers' associations also contribute to erosion (Hassel 1999; Addison et al. 2017). Furthermore, it is argued that a fall in efficiency can be observed owing to higher adjustment costs in times of social and economic change. The main argument is that works councils and collective bargaining match needs less than in earlier times (Streeck 2009). Employers' associations also note the increasing heterogeneity of firms, and argue that collective agreements are too complex and do not fit the specific needs of specific economic sectors.

3. SOCIAL PARTNERSHIP DURING THE GREAT RECESSION

3.1 Reasons for Germany's Job Miracle

The role of policies and institutions in Germany in mitigating the labour market effects of the 2008–09 financial and economic crisis can be studied by looking at the three largest European economies: France, Germany and the United Kingdom. Askenazy et al. (2016) reveal the role of hoarding skilled employees and the dramatic educational amelioration of the workforce, combined with labour market reforms and policy reactions to the recession. In addition, favourable circumstances, for example that the demand shock affected mainly the manufacturing sector, coupled with the ephemerality of the crisis, contributed to the specific circumstances of the German case (Möller 2010a, 2010b; Bellmann and Gerner 2011; Bellmann et al. 2012c; Ellguth et al. 2013; Bellmann et al. 2016b). Thus, compared with other European Union (EU) countries, Germany dealt surprisingly well with the severe decline in its gross domestic product (GDP) in 2008–09: while its growth rate fell by nearly 6 per cent (Eurostat 2014), the employment reaction was comparably mild. This helped to maintain and, even, increase private consumption after the crisis. Paul Krugman (2009) termed this phenomenon 'Germany's jobs miracle'. Furthermore, given the stable employment and low unemployment, GDP sprang back relatively quickly after the crisis. We assume that the German industrial relations system can be regarded as a decisive factor in relation to both output and employment: short-time work regulations, company-level pacts for employment and competitiveness, as well as working-time accounts had a significant impact. In addition, labour market reforms, such as the Hartz reforms, and favourable pre-crisis conditions contributed, although research has not yet reached a definite conclusion (Chih-Mei 2018).

Table 7.6 presents the reasons for Germany's favourable employment during and after the Great Recession (Möller 2010b). The growing scarcity of skilled workers, bailout packages and wage moderation can also be regarded as important.

The fall in GDP experienced in 2008–09 was driven mainly by the decline in exports of the automotive, chemical and machine engineering industries to Asia, the United States and the rest of Europe, while domestic services remained mostly unaffected. For the manufacturing sector, GDP fell by 18 per cent in 2009 (Rinne and Zimmermann 2013). Specific institutional settings in this sector were mentioned by Möller (2010a). The manufacturing sector belongs to the core zone of the German industrial relations system. In addition, highly productive and innovative exporting manufacturers were able to take

Table 7.6 Reasons for Germany's jobs miracle

Favourable conditions and high competitiveness of firms prior to the crisis:
– Wage and employment moderation before the crisis
– Pre-crisis upswing owing to labour market reforms (Hartz IV reforms)
– (Perceived) scarcity of skilled workers
– Competitive manufacturing sector was mainly affected
Government intervention:
– Bailout packages
Cooperation of firms, social partners, works councils and individual employees, making it possible to take advantage of internal company flexibility:
– Short-time working
– Working-time accounts
– Pacts for employment and competitiveness

Source: Bellmann et al. (2016b).

advantage of the rising demand from abroad before the crisis. After the crisis, Germany's exports immediately reached an all-time record in 2011 (Dustmann et al. 2014).

Using data from the Institute for Economic Research (Ifo)-Business Climate Index (Ifo-Geschäftsklimaindex), Bellmann et al. (2016b) demonstrate that business expectations plummeted towards the end of 2008, but quickly recovered at the beginning of 2009. Furthermore, German firms also saw the markets that suffered the aforementioned decline in exports as promising in future. Therefore, these firms strategically hoarded labour and even recruited skilled personnel (Klinger et al. 2011; Bellmann and Hübler 2014). Future labour supply shortages owing to demographic change are also regarded as one of the main future challenges for the German labour market (Caliendo and Hogenacker 2012). This is also relevant to the moderate job losses identified by, for example, Wolter et al. (2015) and Vogler-Ludwig et al. (2016) in conjunction with computerization and automation.

The Economist's view that Germany was the 'sick man of Europe' was justified owing to the high and increasing level of unemployment since the first oil crisis in the mid-1970s, the high financial burden owing to German reunification and an underdeveloped service sector (Walwei 2014a). In 2002, the government appointed an independent expert commission, led by Peter Hartz, then the personnel director of the VW group, to work out a blueprint for labour market reform. This included staff service agencies (Personal-Service-Agenturen), the tightening of conditions for job acceptance, the introduction of training vouchers, the deregulation of marginal jobs (mini- and midi-jobs) as well as temporary work agencies and an additional start-up subsidy (Ich-AG) and addressed changes in the organizational structure of the FEA.

The Hartz IV reforms are generally seen as the most controversial issue. They replaced the former unemployment benefits and social assistance with a single means-tested replacement scheme for needy unemployed jobseekers and their households, on a flat rate basis comparable with former social assistance. A more drastic change was the cutting of the maximum duration of benefit entitlement to 12 months for people aged under 58 years of age. For older unemployed the threshold was higher and changed thereafter.

Thus, for newly unemployed people the transfer level decreased, the incentive to find a job increased and the tax burden and social security contributions were reduced.

Even though the causal effects were questioned by some researchers, after the implementation of the Hartz IV reforms the unemployment rate decreased considerably. This development was not associated with rising wages, so the labour costs decreased because of the mentioned recovery in the productivity (Burda and Hunt 2011). Wage moderation occurred because the labour market reforms made employees more willing to accept lower-paid jobs (Caliendo and Hogenacker 2012). Thus, relatively low labour costs created favourable pre-crisis conditions.

After the bankruptcy of Lehman Brothers, the German Federal government intervened with a bailout package to stabilize the financial markets (Rettungspakt zur Stabilisierung der Finanzmärkte) aimed at preventing collapse of the economy by steadying the German banking system. This was supplemented by several schemes introduced to activate the German economy (Rinne and Zimmermann 2011). A well-known example was the scrappage (Abwrackprämie) programme, a government-subsidized allowance for car owners buying new cars in exchange for their old ones, compensating for the temporary lack of demand in the automotive industry, which was one of the three sectors hardest hit by the Great Recession.

International comparative analyses reveal the strictness of German employment legislation. Therefore, social partners, works councils, firms and individuals cooperated to exploit within-firm flexibilities to allow firms to hoard labour during the crisis. These flexibilities included short-time working, working-time accounts and company-level pacts for employment and profit-sharing (Bellmann et al. 2016b).

3.2 Short-time Working

Cyclical short-time working (*konjunkturelle Kurzarbeit*) was often used to overcome the significant unavoidable shortage of work with a good chance of returning to a normal workload (Bellmann et al. 2012b, 2016b; Brenke et al. 2013; Kroll and Schneider 2019). Short-time working compensation can be awarded to all employees covered by the social security system with a loss of 10 per cent or more of gross monthly income. The income loss is first compensated by the establishment, which recompenses 60–67 per cent of net income paid before the implementation of the short-time working scheme. After reducing working time, the establishment is then reimbursed by the FEA. In addition, most sector- and firm-level collective agreements contain provisions allowing firms to reduce working hours by as much as 20 per cent in order to avoid loss of employment (Bosch 2009) and, often, short-time allowances paid by the FEA are supplemented by allowances firms are obliged to pay on the basis of sectoral agreements. Either the employer or the works council is obliged to report the estimated shortage of work to the local employment agency and to prove the mentioned conditions of eligibility. The employers typically have to pay social security contributions for the number of working hours lost owing to work sharing.

During the Great Recession, however, temporary modifications applied, for example in training on the job. During labour shortages, the FEA covers as much as 100 per cent, under specific conditions. These generous offers contributed to the success of the programme. However, the social partners agree that it was difficult for the firm to organize

training courses. Therefore, they suggest that these opportunities can be used faster and could be prepared better. Unions criticize the higher work intensity. Employers' associations point out that often the combination of short-time working and further training was not easy to implement, because of the short duration of such working and the partial reduction of the workload.

Furthermore, in order to provide companies with planning security, short-time working compensation eligibility was extended to a maximum of 24 months in January 2009, but was again reduced after the crisis, to 12 months. Short-time working began to rise in the third quarter and reached its peak in June 2009, with more than 63 000 affected establishments and 1.4 million affected employees, resulting in overall costs for the FEA and the Federal government of €5 billion for the fiscal year of 2009 (Bellmann et al. 2012b). Short-time working helped with labour hoarding (Dietz et al. 2010) and avoided unemployment (Boeri and Bruecker 2011). Finally, it is worth noting that the existence of a works council not only eases firms' administrative burden in relation to reporting (expected) work losses, but avoids individual agreements with every single employee participating in short-time work, because employers do not have the right unilaterally to announce short-time work allowances.

Before firms apply for short-time working, they first have to use other options to reduce the number of employees, for example, by laying off employees with fixed-term contracts, temporary employees and depletion of overtime hours on working-time accounts. Although the proportion of establishments with working-time accounts increased significantly before the crisis, using the IAB-Establishment Panel survey, Bellmann and Gerner (2011) could not find evidence that establishments with working-time accounts made smaller employment adjustments.

In summary, the government considers the use of short-time working during the financial crisis as a success in order to compensate the temporary weakness in demand for products. However, regarding future structural change, for example, owing to digitalization or environmental protection, other programmes, such as further training for the unemployed as well as the employed, are required. Also, owing to a lack of appropriate programmes, the government has adopted the Qualification Opportunities Act (Qualifizierungschancengesetz) in order to facilitate more training within companies. In addition, labour market programmes addressing the unemployed currently focus increasingly on further training leading to professional certificates. Therefore, recent changes in the programme are not intended to reduce unemployment caused by financial and economic problems owing to potential impacts of digitalization.

3.3 Employment and Competitiveness Pacts

As collective bargaining arrangements became more flexible in Germany from the 1980s to allow management and works councils to deviate consensually and with the permission of the employers' association and union from sectoral agreements, company-level employment and competitiveness pacts could already be observed before the Great Recession. Thereby, social partners extended their bargaining on wages, working time and further training to include, for example, measures to save jobs and boost competitiveness (Bellmann et al. 2008, 2016b; Ellguth and Kohaut 2008; Bellmann 2014). Although research based on the 2009 Works Council Survey of the Economic and Social Research

Institute (Wirtschafts- und Sozialwissenschaftliches Institut, WSI) revealed that the establishments did not meet the negotiated pledges (Bogedan et al. 2011), an investigation for 2008–09 using the IAB Establishment Panel data demonstrated that the promises to secure jobs were kept (Bellmann and Gerner 2012a, 2012b). Social partners at the firm- and sectoral levels have to disclose business data during these negotiations.

Multivariate analyses showed the selectivity of the conclusion of company-level employment pacts among large establishments suffering poor profits and embedded in the German industrial relations system. Further investigations have demonstrated labour hoarding and positive employment effects in comparison to establishments in a similar situation but without a company-level pact for employment (Bellmann and Gerner 2012a). Therefore, the social partners are currently optimistic that firm-level agreements are useful for meeting the challenges of structural change in general and digitalization in particular.

4. NON-STANDARD TYPES OF WORK

4.1 Definitions and Recent Development

Atypical forms of employment (or non-standard types of work) are one of the most controversial issues in the German public debate on labour market issues. There are few fields in which deregulating or re-regulating initiatives can be found more often. Employer organizations and trade unions assess the prevalence and development of employment forms very differently. Employer organizations regard non-standard work arrangements as an indispensable part of employment and labour market flexibility, and generally oppose far-reaching initiatives to restrict atypical employment. By contrast, trade unions demand re-regulating and restricting the use of non-standard work arrangements or at least equal treatment of non-standard and standard work as far as possible.

Two types of work arrangement need to be distinguished: standard and non-standard (Mückenberger 1985, 2010; Osterman 2000; Houseman and Osawa 2003). Standard work is usually considered to be working full-time in a permanent job. It offers broad access to social security and implies a clear assignment to an employer. Therefore, deviations from standard employment, such as fixed-term contracts or part-time employment, are classified as non-standard. Empirical findings show that, compared with standard workers, non-standard workers are, on average, at greater risk of losing their jobs, being in the low-wage sector and being excluded from (also fringe) benefits and firm-based training (Autor 2001; Jahn and Pozzoli 2011; Kalleberg 2011).

However, the classification has its limits. Some examples illustrate this. In particular periods, such as while in education or family work, part-time employment might be of particular interest for individuals since it offers them an opportunity to reconcile different activities (such as gainful work and family work) in a convenient manner. Furthermore, in particular circumstances, fixed-term contracts or temporary agency work can facilitate entry to the labour market and serve as a stepping stone to more stable employment (Boockmann and Hagen 2005; Jahn and Rosholm 2014). Therefore, non-standard employment should not generally be considered precarious work. Of particular importance in this context is whether a potentially precarious work arrangement is an occasional or a regular occurrence.

Notes:

Self-employed includes assisting family members.

* Type of employment is based on the main occupation.

Source: Authors' calculations based on the EU Labor Force Survey (Scientific Use File). © IAB.

Figure 7.2 *Population aged 15–64 by labour force participation and type of employment,* Germany, 2002 and 2016*

Figure 7.2 shows the prevalence of standard and atypical employment in the EU for the total population aged 15 to 64 years (Rhein and Walwei 2018). Regarding the whole of EU, the share of standard work did not change very much between 2002 and 2016, remaining close to 40 per cent. In addition, the data indicate an increase in atypical (dependent) employment by more than three percentage points in the EU since 2002. This increase has not been at the expense of standard work, but at the expense of persons currently not employed (unemployed plus inactive). A similar development might be notable for Germany, where shares of standard work and atypical work increased between 2002 and 2016. However, Figure 7.2 illustrates that in Germany the growth of atypical employment was stronger compared with the growth of standard work in that period. By contrast, in Denmark, the Netherlands and Italy, the share of atypical employment grew considerably, while the share of standard work decreased.

Specific forms of employment are used in companies to different degrees and are not equally distributed among workers. While the use of temporary agency work is above average in manufacturing, fixed-term contracts and all variants of part-time employment are disproportionally identifiable in the service sector. Part-time employment is a domain of female and older workers, and of people who have to reconcile education and

employment (Wanger 2015). By contrast, younger workers can be found more often in fixed-term contracts and temporary agency work. Workers in temporary jobs were more frequently jobless, job entrants or job returners before entering employment. Workers with no formal qualification are prevalent in all types of non-standard employment. Academics frequently start their career with a fixed-term contract. However, eventually, most will switch to an open-ended contract (Sperber and Walwei 2017).

The reasons for changes in the composition of work arrangements over time are manifold. Shift-share analyses suggest that trends towards more employment in services or a higher female labour force participation rate were not the main driver (Walwei 2014b). Changes within particular industries or demographic groups were of greater impact. This suggests that a mix of factors played a decisive role in the long-term trend. The mix not only consists of changes in firms' personnel policies, focusing more on flexibility, but also of changed preferences and workers' needs. Owing to their relative market power the parties involved may have different options in different segments of the labour market. In addition, institutions might have an impact in this context. It is important to note that Germany's regulations create noticeable incentives for the use of non-standard work arrangements. These incentives relate to employers' comparatively high social security contributions, the strict employment protection legislation, the strong activation of the unemployed since the implementation of the great labour market reforms between 2003 and 2005, and regulations favouring the male breadwinner model, for example, regarding the joint assessment of spouses within the system of German income tax.

4.2 State Regulations

Labour law concerning non-standard work since the mid-1980s has been characterized by deregulation for long periods. This trend went on at least for two decades and culminated in the labour market reforms from 2003 to 2005. Since then a tendency towards re-regulation noticeable. There is an interesting coincidence in this respect: whereas the deregulation until 2005 took place during a period of ongoing and increasing labour market problems, the re-regulation picked up speed when the labour market began to recover from 2005 onwards.

The strongest deregulation dynamics in the two decades from 1985 to 2005 were found in those non-standard working arrangements, which made it easier to circumvent dismissal protection. Whereas deregulation started with fixed-term contracts, the focus later shifted more to temporary agency work and marginal part-time employment (mini-jobs). Of the utmost importance for the legislation on fixed-term contracts was the Employment Promotion Act (*Beschäftigungsförderungsgesetz*), which in 1985 for the first time permitted fixed-term employment contracts without an objective reason for a duration of up to 18 months. In 1996, the maximum duration for fixed-term employment contracts without an objective reason was extended to 24 months. In 2001, the Employment Promotion Act was superseded by the Act on Part-Time and Fixed-Term Employment (*Teilzeit- und Befristungsgesetz*) with the aim of avoiding the use of consecutive fixed-term contracts without an objective reason when it was possible to do so. Since then it has been possible to extend a fixed-term contract without an objective reason up to three times within the maximum permissible duration. Also, a ban has been introduced on concluding fixed-term contracts with individuals who were previously employed by the firm.

The use of temporary agency workers by firms was also made steadily easier between 1985 and 2005, first by gradually raising the maximum assignment duration for an agency worker, from six to nine months in 1994, then to 12 months in 1997 and, finally, to 24 months in 2002. From January 2004, temporary work saw fundamental changes in connection with the Hartz reforms. Previous regulations, such as the extensive restrictions on the use of fixed-term contracts in temporary agency work, the bans on synchronizing the assignment of agency workers with their employment contract and on rehiring former agency workers and the restriction of temporary work assignments to two years, were revoked. At the same time, the equal status of agency workers and core workers was generally laid down in law, in favour of agency workers. However, scope was created for collective agreements to arrange divergent regulations, for example, concerning wage setting (Antoni and Jahn 2009).

The area of application of marginal part-time employment (mini-jobs) was also extended during the two decades up to 2005. This type of employment is tax-free for employees, although employers are obliged to pay flat rates for insurance and taxes. In 1996, the monthly wage limit was first raised from 390 DM to 590 DM. Although the limit was raised again in 1999 to 630 DM (later, €325), the previous exemption of second jobs from tax and social security contributions was cancelled. Since the implementation of the Hartz reforms in 2003, it has once again become irrelevant for fiscal and social law whether a mini-job is a person's main job or a second job. Furthermore, the reforms increased the monthly wage threshold level from €325 to €400. The previous restriction of weekly working hours to 15 was dropped without replacement. In addition, a midi-job zone first up to €800 (now, up to €1300) was introduced. Although midi-jobs are fully subject to income tax, the employees concerned pay lower social security contributions.

Following the labour market reforms, regulations on non-standard work were initially stable. For some years, however, a trend reversal has been noticeable. The most significant adjustments pertain to regulations on temporary (agency) work. There have also been slight changes in part-time employment. In addition, the current government has far-reaching plans to restrict fixed-term contracts (Hohendanner 2018).

The most important changes in the regulation of non-standard work arrangements since 2005 concern temporary agency work. Aspects that must be emphasized here include the ban on companies setting up their own agency and hiring out these agency workers within their own group of companies (*Konzernleihe*) in 2011 and the introduction of a sector-specific minimum wage in the same year. In 2012, collective agreements in the chemical industry and the metal and electrical industry for the first time allowed graduated wage supplements. The levels of these payments depend on the duration of the agency worker's assignment and are aimed at equal pay. A new regulation in place since April 2017 involves two even more far-reaching changes. First, when agency workers are hired out, collective agreements can no longer stipulate deviations from equal pay for an indefinite period. In general, nine months after the start of their assignment temporary agency workers must be put on an equal footing with other employees in the user firm. Second, the maximum duration of an agency worker's assignment has been restricted to 18 months again. Nevertheless, collective agreements can include opening clauses to prolong the assignment period of agency workers.

New regulations have come into force on contract work. The justification of illegal forms of contract work (pseudo-contract work) by retrospectively claiming that it was temporary agency work has been abolished. Works councils have obtained more rights with regard to collecting information on the number and working conditions of employees involved in contract work. Finally, the new regulations are also intended to increase legal certainty on the boundary between dependent employment and self-employment.

Other changes regarding non-standard work refer to part-time employment. In 2013, the level of the monthly wage threshold for marginal part-time employment (mini-jobs) was raised to €450. Since January 2019, part-time workers have been entitled to return to full-time work. This regulation refers to workers employed in companies with more than 45 employees. In addition, the government intends to significantly restrict fixed-term contracts. The current coalition agreement stipulates that the maximum period of fixed-term contracts without an objective reason should be restricted to 18 months, and no more than 2.5 per cent of the workforce of companies with more than 75 employees should be on fixed-term contracts without an objective reason.

Finally, the issue of equal treatment of workers in standard and non-standard forms of employment has to be addressed. Equal treatment was the guiding principle of the recent reform of temporary agency work in 2017. In Germany, dependent non-standard workers enjoy the same rights as dependent standard workers as far as labour law and basic social protection are concerned. A survey of non-standard forms of employment from 2014 confirms that compliance with the regulations is also observable in practice (Fischer et al. 2015). The results show that workers with part-time or fixed-term contracts do not report a lack of protection. However, this is not in general the case regarding marginal part-time employment (mini-jobs). The mentioned survey indicates that, for example, more than 40 per cent of workers with mini-jobs, according to their own statements, were excluded from paid sick leave and one-third from vacation leave. The main reason for the exclusions was a lack of information. The survey investigates that neither workers nor firms were fully aware that mini-jobs necessarily involve these types of protection. However, in addition, more adequate protection for marginal part-time workers can be achieved by strengthening compliance with the law and stronger enforcement of existing regulations, for example, by more frequent inspections.

4.3 Sectoral Bargaining

In general, sectoral bargaining aims at tailor-made solutions for particular industries. Therefore, the first question is, why do firms use the different forms of employment? Part-time employment allows more flexible use of personnel. In this way firms may also take into account specific preferences and needs of workers regarding working hours (Fischer et al. 2015). The main reasons for using temporary agency work are the rapid availability of workers and temporary demand for employment (Bellmann et al. 2012a). Fixed-term contracts are often utilized during periods of economic uncertainty, as well as to meet temporary demand (Fischer et al. 2015).

Sectoral bargaining covers atypical employment in only a rudimentary fashion. One possible reason for this is that non-standard workers are not well represented by trade unions. According to surveys, their rate of unionization is only half that of standard workers (Schlese 2015). Therefore, it is more difficult to pursue their interests properly. In

addition, concessions for non-standard workers are difficult to achieve because they may come at the expense of more unionized standard workers. Furthermore, it is much easier to organize the interests of more homogeneous groups, such as workers with standard contracts. Employer organizations are under little pressure to react on such demands as they are aware that atypical workers are not organized. Since the adoption of the Hartz reforms, trade unions have therefore concentrated on political lobbying. The main recent issues include temporary forms of employment and contract work (Keller 2018).

As regards temporary employment, the few provisions in collective agreements are often based on opening clauses, which are implemented in law. With regard to fixed-term contracts without an objective reason, collective agreements can potentially allow for more renewals and longer individual contracts than under labour law. The use of temporary agency work can be facilitated by collective wage agreements and longer assignment periods. For example, the current collective agreement in the metal industry allows an assignment period of temporary agency work of up to four years, which is much longer than the current legal obligation of 18 months. Benassi (2016, p. 618) argues in this context that ‘the collective agreements signed by the DGB unions for the agency sector set very low standards but made agency workers politically acceptable, making negotiations for works councils even more difficult’.

In contrast to fixed-term contracts or temporary agency work, part-time employment has been addressed more often in collective agreements and over a number of years. The WSI-Tarifarchiv (an archive of collective agreements) shows that almost one-third of all documented collective agreements include explicit regulations on part-time work (Bispinck 2016; Seifert 2019). They deal with entitlements, minimum working hours, maximum working days and transitions from part-time to full-time employment (and vice versa). Employees can request part-time working. However, employers can refuse if special circumstances preclude practical implementation; for example, if part-time working is not compatible with operating procedures. Some collective agreements mention that, if an individual has caring responsibilities, firms are generally obliged to allow part-time working (for example, in industries such as iron and steel or printing). Collective agreements may also include regulations on minimum daily working hours as well as a maximum number of working days a week. Both regulations aim at preventing very low daily hours (for example, in chemical, metal, retail and banking jobs). Other collective agreements aim to increase opportunities for part-time workers who are interested in working more hours or even full-time. If full-time jobs are available in a company, part-time workers should be preferred candidates (for example, in the public sector) or at least need to be specifically informed about available vacancies (for example, in banks, metals and chemicals industries).

4.4 Firm-level Policies

Firm-level policies on work-related issues must necessarily be even more specific than sectoral bargaining. They deal with the particular interests of a certain company and its employees. The contents of firm-level agreements arranged between management and the works council indicate the kind of issues generally dealt with. Figure 7.3 shows that non-standard work is not often the subject of firm-level agreements in firms with works councils. Slightly more than a quarter of firm-level arrangements in 2017 dealt with

Figure 7.3 Topics of firm-level agreements, 2015 and 2017

part-time employment (28 per cent) and one-sixth of them included provisions on either temporary agency work (17 per cent) or fixed-term contracts (16 per cent). Compared with 2015 the corresponding shares went up: part-time employment by 5 per cent, fixed-term contracts by 2 per cent and temporary agency work by 2 per cent. One reason for the low incidence of non-standard work regulations in firm-level agreements might be that workers in atypical employment are not only less unionized but also underrepresented in works councils (Baumann and Brehmer 2016).

In the recent past, labour market research has investigated several relationships between the existence of works councils and the distribution of employment forms. There are findings that indicate that works councils have the potential to restrict the use of fixed-term contracts and temporary agency work (Ellguth and Kohaut 2011).

Works councils are rare in temporary work agencies (Bellmann et al. 2009). Whereas part-time employment covered by social security can be found more often in firms with a works council, mini-jobs are underrepresented. One characteristic of marginal part-time employment is that it is used mainly in firms neither covered by collective agreements nor with a works council; that is, firms in the ‘white spaces of social dialogue’ (Eichhorst and Tobsch 2017, p. 68; Addison et al. 2019).

The general task of works councils is to monitor the implementation of work-related policies, as well as firms’ compliance with state regulation and collective bargaining. Temporary agency work and contract work have been the most important issues in recent years. However, there are major challenges for worker representatives in this respect. This is mainly because works councils face a dilemma. Although in general they oppose temporary agency work, they also (have to) accept it as part of the management’s strategy. Another problem here is that the short assignment periods of most temporary agency workers potentially prevent effective representation of their interests in user firms. Nevertheless, works councils have some options. For example, they can demand compliance regarding equal pay and equal treatment. Works councils also have the option of reaching agreement with management on how temporary agency workers are recruited. In recent years, contract work as well as bogus self-employment have drawn increasing attention. Both types of employment can be used to circumvent firm-level agreements and the codetermination rights of works councils. Currently, the union strategy is to raise works councils’ awareness of this matter. This is because the new law requires works councils to be informed regarding the number and working conditions of employees involved in contract work.

In conclusion, for non-standard types of work, state regulations are of the utmost importance. For various reasons, especially a low degree of unionized atypical workers and substantial disagreements in this respect between social partners, neither sectoral bargaining nor firm-level policies deal with non-standard work to a large extent. Instead, social partners focus mainly on lobbying and tend to take a pragmatic attitude. Assuming that non-standard forms of employment have always existed and will also exist in the foreseeable future, social dialogue at sectoral level, as well as at firm-level, could focus even more on labour market transitions from atypical employment to standard work (International Labour Office 2015). Social partners could particularly address this issue by closing the company training gap between standard and non-standard workers (Bellmann et al. 2013).

5. DIGITALIZATION

5.1 Development and Potential Impacts on the Labour Market

In developed countries, technological change is a constant phenomenon. In the post-war years, technological change was always an important issue of social dialogue. However, similar to the 1960s when automation took place, digitalization may also cause tremendous disruption and is expected to be a major challenge for the society as well as the social partners.

Digitalization is now one of the main drivers of technological change. One reason for this is the use of digital logic circuits, and its derived technologies, including the

computer, the smartphone and the Internet. Digital technologies affect the computerization of production, service delivery and, even, the private sphere. Brynjolfsson and McAfee (2011) have identified accelerating technological innovation in the area of digital technology, which is no longer confined to routine manufacturing tasks, but may spread to numerous other routine tasks, particularly in companies operating in banking and insurance. Advances in areas such as machine learning, artificial intelligence, mobile robotics and big data will further facilitate computerization of the economy (Frey and Osborne 2013). Connectivity is achieving completely new dimensions. Electronic devices and microprocessors not only connect people with each other, but also machines with workers and machines with other machines. Digital technologies are therefore having a wide range of impacts on employment and work.

A first issue is how far digital technologies may influence current job profiles. Previous studies suggest that it is important how far occupations are dominated by routine and repetitive tasks (Autor et al. 2003). Recent research for Germany has tried to calculate the potential for substitution by digital technologies (Dengler and Matthes 2018). This indicates how far digital technologies are already able to replace tasks still performed by workers. However, how far substitution really does take place largely depends on the diffusion of digital technologies and their particular profitability at firm level. The calculated potential for substitution suggests that, in contrast to despite previous waves of technological change, probably all skill levels will be affected. Nevertheless, the relative risk of potential automation is highest among low- and middle-skilled jobs. Substitution potential is by far the highest in production. In other segments, such as different types of service occupations, the potential for substitution is lower, but still significant. Dengler and Matthes (2018) calculate that about one-quarter of employment relationships covered by social security in 2016 were related to jobs in which 70 per cent of tasks might be substituted by computers in future.

Studies focusing only on the probability of computerization and automation affecting certain occupations have limitations. They concentrate only on possible job losses and neglect other impacts of technological change, such as reshaping existing jobs or, even, job creation through innovation and productivity gains. Macroeconomic scenarios take into account these compensatory impacts. Studies in Germany have not identified significant job losses (Wolter et al. 2015; Vogler-Ludwig et al. 2016). However, the results indicate increased turnover and considerable additional shifts between different segments of the labour market, such as industries, skills and occupations. A recent forecast commissioned by the German Ministry of Labour and Social Affairs (BMAS) shows that overall structural change, including impacts of digitalization, may lead to a situation in Germany in which the composition of employment will differ substantially from how it is today because more than 3 million jobs will either come into existence or disappear (Zika et al. 2019). Occupations in areas such as information technology or teaching, relying on creative skills, tend to become more important, whereas jobs in manufacturing (for example, machine- and facility-controlling and maintenance of machinery) or service administration involving a high level of routine non-manual tasks are more likely to shrink. In general, the already ongoing structural change towards a service and knowledge-based economy will be accelerated by digital technologies.

The emergence of digitalization may also influence work-related issues. Employers and employees may confront one another with new demands for flexibility. For workers,

digital technologies may offer new options for reconciling private life and employment. In a digital world, employers will be much more concerned with workers' availability. The main reason is that the Internet and its various applications remove spatial and systematic barriers to working. This means that digitalization may create a potential conflict of interests between the two sides of the market, particularly regarding distinctions between working time and leisure time.

Mobile work, especially from home, is of particular interest. This work is now based mainly on the latest information and communication technology (ICT). The availability of mobile work or working from home depends on the characteristics of the particular job. In jobs dominated by manual tasks and by a high frequency of face-to-face contacts, ICT-based mobile work will scarcely be feasible. In contrast, many other jobs will not require a permanent presence at the workplace. Recent evidence for Germany shows that new types of home-office working affect white-collar workers more than blue-collar workers, women more than men and management more than employees (Grunau et al. 2019). To date, however, there is no indication in Germany that ICT-based home-office working has increased rapidly. Workers report that working from home supports the reconciliation of employment and private life, but that it also may lead to a blurring of boundaries between leisure and working time.

Digital technologies may also alter work in another way. This is mainly owing to the assumption that the emergence of these new technologies tends to lower transaction costs and enables firms to substitute workers more easily. This reduces the opportunity costs of hierarchical organization and external flexibility. Smart platforms can be used either for internal allocation, outsourcing or virtual markets. The latter is known as online or platform work (crowd employment). Platforms enable single persons and firms to provide specific services or particular products (Green and Barnes 2013; Saxton et al. 2013). The principle behind crowd working is that people work on individual tasks for a certain customer in a way similar to a self-employed freelancer.

Examples of tasks often commissioned through crowd working are web content and software development, database building and cleaning, classifying web pages, transcribing scanned documents and audio clips, classifying and tagging images, reviewing documents, checking websites for specific content, validating search results, and designing logos and drafting slogans for the advertising industry. (Eurofound 2015, p. 107)

The examples suggest that platform work is heterogeneous and not suitable for all types of jobs, but at least for some tasks of any job (Kittur et al. 2013). The use of platforms can have many advantages for firms (Linnhoff-Popien et al. 2015). Potential contractors can be found relatively quickly via intelligent platforms, which make available a selection of contractors in respect of quality. This helps to reduce employment costs and tidy up organizational processes within companies. Nevertheless, it is still a new phenomenon. To date, the spread of platform work seems to have been comparatively slow, affecting less than 1 per cent of total employment in Germany (Bonin and Rinne 2017). The few surveys carried out in Germany indicate that platform work is, in most cases, carried out by individuals not as their sole source of income, but mainly as a side job (Leimeister et al. 2015; Serfling 2018). In addition, these surveys suggest that platform workers have a range of preferences: some of those interviewed would prefer standard employment, if available, but others favour the autonomy that this type of employment provides

(Leimeister et al. 2015). The autonomy of platform workers can be characterized as follows: they are free to decide at any time when, where and to what extent they want to work.

Digitalization is a new phenomenon in relation to regulation and (collective) agreements between firms and unions. To date, neither state-level regulations, sectoral bargaining, nor firm level policies have incorporated this issue to a substantial extent. There are various reasons for this observation. The debate on Industry 4.0 started only in 2013 and it took time to move the topic into the spotlight of public and political interest. Even now, the uncertainties about the speed of diffusion and concrete impacts of digitalization are substantial. Significant differences in these respects between industries, companies, groups of workers and regions can be expected and will require adequate solutions for the parties involved. Nevertheless, we can observe the first approaches in legislation and, in particular, at company level. Given significant changes in the economy, social partnership and social dialogue will be in high demand in the foreseeable future. The recent debate also shows that trade unions and employers have conflicting interests regarding regulatory issues. While unions intend to either maintain labour market protection (for example, regarding working hours) or, even, extend regulations (for example, concerning online work), employer organizations are demanding more up-to-date labour market regulation.

5.2 State Regulations

The spread of digital technologies has so far had a fairly limited impact on labour market regulations and programmes. Labour law has not reacted at all to the increased use of digital technologies and its possible employment implications. However, the current coalition agreement includes an opening clause for the Working Time Act (*Arbeitszeitgesetz*). This would allow social partners to put innovative and flexible working time models to the test. Based on this experimental clause, firm-level agreements may then be used to adapt work schedules to the needs of the parties. This could, for example, involve implementation of more flexible working hours.

Regarding working-time issues, there is controversy between employer organizations and trade unions. Employer organizations demand more flexible regulations, while maintaining the volume of labour, and oppose far-reaching legal demands (for example, in respect of life working-time accounts or working from home). They in particular criticize the rigid maximum length of the working day (10 hours, not including breaks) and propose instead a maximum of weekly working hours. They also criticize daily statutory rest periods (11 hours) as these may restrict the opportunities made available to them by modern communications. The trade unions, however, vigorously oppose these proposals. On the one hand, they argue that the current working-time regulations are already flexible and serve as a means to ensure workers' health and safety. They further argue in favour of more sector-specific solutions instead of general legal changes. On the other hand, they propose a right for workers to work from home, aiming to strengthen their self-determination. In addition, the metal union (IG Metall) argues that workers should have more choice as to their working hours, offering them more time sovereignty. The current government seeks to strengthen workers' rights, for example, by offering them more opportunities to reconcile gainful work with family or care work. The Minister for

Employment recently even proposed a right for employees to work from home. However, it is not clear whether this can be realized and in what circumstances.

In contrast to labour law, labour market programmes have already taken digitalization into account. A new initiative addresses possible changes in job requirements induced by the increased use of digital technologies. Since the beginning of 2019, the Qualification Opportunities Law (Qualifizierungschancengesetz) has improved employers' capacity to train their employees. The previous regulation, which was in place until 2018, restricted grants to small and medium-sized companies, on the one hand, and to low-skilled as well as older workers, on the other. The new regulation removes those restrictions. Now all companies and workers can, potentially, be given assistance. The funding includes grants for wages as well as for training costs. The grants are more generous for small companies, however. Successful participants receive a certificate. In firms with more than 2500 employees the employer and the works council have to agree on the existence of skill needs for these measures to be implemented. In recent political debate, the government and the trade unions have proposed extending the grant if a specific proportion of workers in a company are likely to be affected by structural change.

5.3 Tripartite Consultations and Discussions

An important part of government activities in the recent past have consisted of consultations with social partners and other organizations. Of the utmost importance in this respect was the development of the 'Weißbuch Arbeiten 4.0' ('White Book Work 4.0'). The German Ministry of Labour and Social Affairs first started with a Green Book addressing relevant questions in the context of digitalization and its implications for work (Bundesministerium für Arbeit und Soziales 2015). Already this part of the process involved the social partners to a large extent, but also various associations, companies and the academic community. The White Book process itself involves various elements. It consists of a broad public dialogue and an expert dialogue and initiated academic studies on the issue of digitalization and work. Part of the public dialogue were, for example, 175 rounds of discussion on digitalization all over the country. The centre of the expert dialogue was the establishment of a consultancy circle consisting of high-level and influential representatives from companies, works councils and academia. The main outcome of the White Book was that it formulates recommendations regarding particular areas of action in the field of the government, social dialogue and companies. Such recommendations cover various issues, such as the employability of workers, the management of working hours, working conditions in service industries, health and safety issues, employee data protection, worker participation, social protection of self-employed and challenges for the welfare state (Bundesministerium für Arbeit und Soziales 2016).

Since the beginning of the current legislative term in 2017, the German Ministry of Labour has continued to focus its activities on the implications of digitalization for work. It founded a completely new subdivision organized as an internal think tank aimed at identifying challenges and submitting proposals regarding digitalization. In addition, the Ministry of Labour set up a Council for the World of Work (Rat der Arbeitswelt) in 2020. It consists of high-level representatives from companies, works councils and academia. Some of these were proposed by the social partners. The council will particularly deal with drivers of the world of work, including digitalization, and focus on its potential

implications for companies. It plans to establish a digital platform offering current data indicating changes in the world of work. In addition, the council will produce yearly reports on selected and highly relevant topics on work-related issues. The main outcome of all of these consultation activities is that they had already sensitized the public, as well as decision-makers, regarding the potential impacts of digitalization on work.

5.4 Sectoral Bargaining

As in the area of state-level regulations, so too at sectoral level bargaining about labour market related issues, and digitalization is still in its infancy. There is a concern, particularly among the unions, that ongoing digitalization may endanger decent work. For both social partners there are opportunities and challenges. Some collective agreements have already addressed specific issues. For example, the insurance sector has implemented new regulations on further training in digital technologies. The metal and electrical industry (Metall- und Elektroindustrie) has included regulations on mobile work in their collective agreement.

Comprehensive examples include collective agreements from 2018 and 2019 drawn up by the employer organization of the chemical and pharmaceutical sector (Bundesarbeitgeberverband, BAVC) and the corresponding trade union (Industriegewerkschaft Bergbau, Chemie und Energie, IG BCE). They reached agreement on the 'Roadmap Work 4.0', within the framework of which they started negotiations on various topics in order to modernize working conditions in the industry. The topics include work volume, sovereignty of working time, mobile working and training programmes, as well as working-time models orientated towards employees' current life phase. They also introduced the 'Toolbox Work 4.0' to support individual firms in areas such as the flexible location of work and flexible working-time schedules, digital skills and data protection, as well as decent and healthy working conditions. The most recent agreement even includes a qualification offensive, addressing the impacts of digital change in the chemical industry.

The trade unions, particularly IG Metall, are striving for more protection of online workers. From the perspective of the unions, online workers are dependent contractors. They should not only be granted more rights to deal with platforms, but also social security (Weber 2018).

Experiences of the employees themselves, the employers and the social partners demonstrate that digitalization is also associated with further development of abilities and competences (Bellmann 2017). This assessment has led to a significant increase in the number of employees participating in firm-level training schemes, from 18 per cent in 2001 to 35 per cent in 2017. The number of establishments conducting these schemes has also risen, from 36 per cent in 2001 to 53 per cent in 2017 (Müller et al. 2018).

The transformation of firms, caused mainly by new products and processes, increases the importance of further training and requalification. In this respect, the social partners are focusing on different issues. The unions are calling for additional funding of these measures based on a qualification needs analysis. The employers' associations argue that the accent should be on small and medium-sized companies. They warn about possible deadweight effects. In addition, they propose that the government should focus on improving the general and vocational schooling system. Furthermore, employer

organizations are in favour of reforming short-time work allowances. Firms, not the state, should be responsible for managing the process of economic transformation. In cases of insolvency and economic difficulties state-financed measures are generally seen as necessary.

5.5 Firm-level Agreements

Most of the activities affected by work-related digitalization can be observed at firm level (Baumann et al. 2018). The topic is still not well established and firms' circumstances can differ a great deal. Maschke et al. (2018) analysed firm-level agreements and identified areas in which they address the labour-related consequences of new digital technologies. Typical areas of interest and activity include:

- increased codetermination regarding digital investment and innovations;
- restructuring, rationalization and employment pacts;
- web-based communication and its impact on work compression;
- new forms of work organization, such as swarm organization, lean concepts and agile work;
- work not bound by time or space;
- self-determined work and life; and
- qualification, training and lifelong learning.

Recently, a great deal of attention has been drawn by negotiations between the employer organization of mobility and transport services (Arbeitgeber- und Wirtschaftsverband der Mobilitäts- und Verkehrsdienstleister e.V., Agv MoVe) and the railroad and transport workers' union (Eisenbahn- und Verkehrsgewerkschaft, EVG). Both parties identified issues related to the future of work, particularly digitalization. This exchange led to a firm-level agreement between the railroad and transport worker union (EVG) and the major German Railway Company (Deutsche Bahn, DB) in December 2018. It has several elements. First, they have arranged model projects in order to test new personnel policies under digitalization. In addition, they described procedures of collaboration between the management and works councils to deal with the introduction of digital technologies, as well as changes in job profiles and work requirements. One important topic of the particular firm-level agreement is mobile work. It particularly strengthens self-determination. Three issues are important in this context: first, workers have a formal right to work from home if their job is suitable; second, working from home needs to be seen generally as regular paid work; and, third, working from home does not necessarily mean that workers need to be accessible at all times.

The following two case studies represent different industries and different firm sizes. They show in more detail the potential opportunities and challenges of digitalization and its work-related issues. The first case study covers a car producer (Audi AG), and refers to the issue of new skills and focuses on initial and further vocational training. The second focuses on the banking sector (PSD Bank) and presents a new firm-level agreement on mobile working from home.

The case study of Audi AG provides an example of the embeddedness of firm-level activities as regards qualifications, training and lifelong learning in the respective

legislation and social dialogue. The ecological and digital transformation is going to lead to job losses. An impressive medium-range strategic reorientation combines a job guarantee with massive investments in vocational training and education.

6. CASE STUDIES

6.1 Case Study Audi AG: ‘Digitalization and Vocational Training’

Industry background

The German car industry belongs to the core of the manufacturing industry. For many years the sector has been under pressure because of the ecological and digital transformation. The electrification and the powertrain in automobiles (e-mobility) poses considerable challenges to enterprises: projections forecast a negative impact on skilled workers, specialists and experts, albeit with a time delay (Mönning et al. 2018).

Recently, transformation costs, the fine imposed because of elevated levels of emissions and the reduced personnel because of e-mobility led to the announcement of job cuts by the larger automobile producers Audi and Daimler, as well as BMW’s intention to discontinue the employment of temporary agency workers.

Audi AG

The car producer is located in Germany and in other countries all over the world. The number of employees in Germany (worldwide) was 61 497 (91 477) in 2018. In recent weeks a cut was announced in the number of jobs by 9500 by 2025, but also the creation of 2000 jobs focused on electric mobility and other new technologies as part of a firm-level agreement which seeks to improve competitiveness by new investments.

Initial vocational training

The car producer and the social partners agree that initial vocational training can be regarded as the basis but that further training has gained in importance. Recently, training regulations were revised. The focus is now on ‘additional competences’ or competences with a clear professional reference. The social partners stress that these training regulations leave scope for variation and technical changes at the firm level.

The company has kept the number of apprentices very stable in recent times and set this as a target in firm-level agreements with the works council. Marketing measures have helped to fill apprenticeship vacancies. However, some apprenticeship places, which seem to be less attractive, were difficult to fill. ‘Additional competences’ have gained in importance, but compliance with the obligatory curriculum is still required. Social partners are involved in the process of drafting regulations for initial vocational education and training. Furthermore, the Chambers of Industry and Commerce are in charge of federal tasks in the fields of initial and further vocational education and training.

Increasing modern and innovative forms of digital learning enrich analogue forms and partially substitute them. Mobile learning (m-learn) is a project which offers learning units on a tablet. Apprentices could produce ‘learning nuggets’ by themselves and make them available to their colleagues. As needs assessments show, vocational training needs to meet the demands of both the firm and the employees.

The transformation of Audi AG is in line with its strategic reorientation. The strategic objectives are broken down into sub-goals. A comparison of required and actual competences is necessary during the development of competences for transformation. According to the strategy, at least five years can be guaranteed for appropriate qualifications within the transformation process. At the same time, more extensive qualification needs are released by a central committee with a focus on the strategic orientation. Recently, the company and the works councils concluded a firm-level agreement on jobs cuts in conjunction with a job guarantee until 2029. An extensive re-teaching programme is necessary for many employees. The transformation towards a digital mobility company will result in a shortage of certain skills. The company seeks to fill the vacant jobs by retraining employees currently working in the production of combustion engines. Both the company and the works council wish to address the topics of the future together with the existing, experienced workforce. In order to achieve this goal, forward-looking qualifications concepts in different areas such as e-mobility and software, and new models of cooperation are being developed. The right to obtain qualifications is explicitly fixed in the firm-level agreement signed by the company and the works council. If these agreements were not concluded, Audi AG would face difficulties finding adequately qualified personnel and the employees would not have access to a high-level initial training and education programme.

Further vocational training

The number of participants in further training courses has developed in line with the (increasing) number of employees. The further training budget has been increased by 25 per cent each year over the past five years in order to cope with transformation. This is causing a change from initial vocational training and education, as well as job enrichment towards requalification. In conjunction with this process, increasing more experienced employees are affected, whose jobs are likely to be enriched and/or changed by digitalization. Again, the social partners and the Chambers of Industry and Crafts are involved.

Audi's project 'Further Training 4.0' (2015–17) has created new standards for learning firms, digital contents, hardware and software requirements. Classroom and digital learning forms are combined as blended learning and pooled in a training ecosystem. Although there are differences with regard to the accessibility of different groups of employees, digital forms have advantages if it is intended to reach a large number of employees. The importance of skills advancement and personnel development is undiminished (with a variety of pathways and job opportunities, including master, technician or academic education). Technical skills and interdisciplinary skills are in demand. Further training measures usually consist of different modules. The relationship between these training contents has not changed, but they are more interconnected. The transformation of Audi AG into a digital car company has dramatically increased the needed skills, although it is worth noting that old skills are still required. Known trends from the related academic literature corroborate the experience of the company's representative: more digitalization, more demand for collaborative and self-regulated learning just in time and place.

The case study of Audi AG provides an example of the embeddedness of the firm-level activities in the area of qualification, training and lifelong learning into the respective

legislation and the social dialogue. The ecological and digital transformation is going to be associated with a loss of jobs. An impressive medium-range strategic reorientation combines a job guarantee with massive investments into vocational training and education.

6.2 Case Study PSD Bank Nürnberg: ‘Digitalization and Working from Home’

Industry background

In 2018, the banking sector consisted of roughly 1800 banks. Total assets of all banks amounted to €7.83 trillion. In all banks and credit institutions at central and local level, 530 400 people were regularly employed (excluding fund management). In addition, 19 500 apprentices were part of vocational training. During the past decade, the number of jobs in the banking sector went down significantly. In 2008, they still had 599 200 employees and 29 200 apprentices (Burkert 2019). Short-term as well as long-term projections suggest a further decline of employment in the financial sector (Bauer et al. 2019; Zika et al. 2019). However, there are hints that, owing to previous structural change, job cuts will probably slow down (Burkert 2019).

In recent years, the economic conditions for the banking sector have been difficult and the situation has not improved. The main reason for the difficult situation is the decline in interest margins. At the same time, banks are strongly affected by structural change. Business processes in the financial sector are undergoing digitalization. Banks offer increased self-service via cash points and online banking. Digitalization within the banking sector has major implications. First, the use of these technologies limits the need for branches. Against this background, it is no surprise that the number of branches has decreased in recent years. Second, the availability of digital technologies may make it possible to reduce routine tasks and to increase job requirements, while boosting demand for the corresponding qualifications. It can already be observed that the share of those with higher qualifications in the banking sector has increased over time (Burkert 2019). Third, digitalization may generate new types of work, such as working from home, in the banking sector. Fourth, the ongoing downward trend in employment, as well as foreseeable structural shifts within it, are a main challenge for social dialogue.

PSD Bank Nürnberg

PSD Bank Nürnberg is a cooperative bank and is located in a German metropolitan area. It consists of a large headquarter and few local branches. As a direct bank, they offer various services, such as loans, construction loans, money management, old-age provision and insurance. Services are offered in different ways, such as personal consultation, telephone help and video help lines. Recent developments indicate that the use of telephone helplines is decreasing. Although video helplines are provided, they are not frequently used. Still of great importance is personal counselling, especially for complex issues such as loans or financial investment. Construction loans or mortgages, in particular, are seen by customers as a once in a lifetime decision and therefore they prefer personal advice for them. PSD Bank Nürnberg is a member of an employer association, and binding collective agreements are in effect. It also has a works council.

Employment and working hours

Currently, PSD Bank Nürnberg has approximately 250 employees of whom around 5 per cent are apprentices. Almost two-thirds of the employees are women, nearly one-third are older than 50 years and around a quarter are working part-time. In contrast to the employment development of the industry as a whole, the bank's staff has increased in recent years. For the near future, PSD Bank Nürnberg expects no significant changes in the employment level. In the recent past the bank experienced recruitment problems in specific areas, such as clerical work, and expect ongoing difficulties filling vacancies in the future. Regarding their personnel requirements, the company is focused not only on formal skills, but also to a large extent on their employees' mind-sets. PSD Bank Nürnberg has a distinct value-orientation and expects its employees to share these values. In order to foster value-orientation, managers receive comprehensive support regarding executive functions and personnel management.

PSD Bank Nürnberg has established flexitime accounts. Working hours are recorded between 6:30 a.m. and 7:30 p.m. Opening hours are between 8.00 a.m. and 6.30 p.m. Although there is no longer a defined core time for employees, executives have to secure the operational readiness of customer-orientated units. In general, teams have autonomy in arranging individual working hour schedules, depending on their functions, and allowing for internal communication. In practice, there are differences between the working-time schedules of workers who regularly deal with clients and those of workers who are responsible for internal services, such as auditing, controlling, personnel and marketing. The flexitime account can accumulate up to 20 hours a month. These accumulated hours can be used for free time either by taking a day off or, even, some hours off. In specific circumstances, even paid overtime can be granted if the monthly balance on the account exceeds 20 hours, urgent work needs to be done and the works council has approved it. In order to satisfy workers' individual preferences, PSD Bank Nürnberg has more than 50 different part-time models in relation to the length and position of working hours during the working week. New, more general working-time models were also tested. Recently, after consultations with the works council a four-day week comprising 10 hours a day instead of the usual five-day-week comprising 8 hours a day was introduced in customer service. The experiment failed because work became much too dense for the affected employees. However, PSD Bank Nürnberg is still willing to test other working-time models which lead to a better compromise between the interests of workers and of corporate management.

Change of strategy towards work not bound by space

In order to increase employer branding in a tough labour market with increasing skill shortages it was a priority of PSD Bank Nürnberg to strengthen non-monetary aspects of their employer orientation. One element in this context is to offer more opportunities for employees to work from home. The opportunities have existed since 2016, but only on an individual basis. At the moment, the share of employees working from home is estimated at about 5 per cent. In general, the employees involved work regularly from home at least one day or several hours a week. To date, the majority of employees working from home have been non-executives. In most instances, PSD Bank Nürnberg's intention was to support the reconciliation of work and family life. In specific cases, also a

long commuting time combined with family responsibilities was an issue. Optimizing the limited office space was another reason to become more flexible regarding the location of work. This can easily be realized in the bank because offices are in general paperless. There are clear indications that creating more opportunities to work from home has contributed to a higher work volume in individual cases.

Corporate management and the works council recently concluded a firm-level agreement addressing the issue of working from home. The main aim of the agreement was to make working from home potentially accessible for all workers in the bank. However, it focuses on mobile work instead of telework. This is because telework implies various and, in part, expensive preconditions (for example, regarding the required workplace equipment at home). The specific nature of the regulation is that it is based on reciprocity. Both the team leader and the employee have to agree on mobile work. Individual job characteristics as well as mutual trust are important factors in deciding whether such an arrangement is feasible. Mobile working is now based on a written agreement. Employees can work up to two days from home, depending on individual circumstances. The arrangements do not have to specify days of the week. In theory, days may even vary weekly. As in the office, working time at home will be recorded through registration/deregistration at the individual personal computer. This secures the existing flexitime arrangement, which was a strong demand by the works council. Therefore, hours worked at home beyond the flexitime frame will not automatically be registered. As a first step in the introductory phase, managers and team leaders will be given instruction in how they can make use of the new option.

Expectations of corporate management

The management believes that mobile work has enormous potential. Specific groups of workers are likely to be particularly keen, such as executives, parents, employees who are involved in project work or employees with permanent or temporary health problems. They estimate that after an introductory phase, up to 35 per cent of employees may make use of the new opportunity. Probably, non-executives will still make up the majority of mobile workers and most will regularly work from home. The management also bears in mind that, for several reasons, not all employees might be interested in working from home. They are also aware that mobile work requires a high level of discipline. The management will seriously take into account the particular wishes of employees. Honesty and sincerity are seen as important principles. Nevertheless, the management intends to avoid objective inequalities. In general, the management expects that the availability of mobile work may have a positive impact on recruitment, workers' long-term loyalty and the development of employer branding. The management is also aware that competitors have comparable arrangements. Increasing competitiveness in the labour market may therefore be another future advantage of the new firm-level agreement. In general, the management sees this development as still in its infancy.

Viewpoint of the works council

The works council of PSD Bank Nürnberg also intensively discussed the firm-level agreement on working from home and finally approved it. It was important for them that flexitime arrangements for employees not working from home could remain in place and that possible alternatives, namely trust-based working time, were neither

proposed nor even introduced. Also from their point of view the advantages of the new firm-level agreement are striking: nobody should be forced to work from home and nobody should be generally excluded from this new option. In addition, it was important for the works council that the recording of working hours remain under the new regime.

Conclusion

The introduction of mobile work at PSD Bank Nürnberg can be regarded as a good example of how it is possible to use attractive opportunities created by digitalization. The agreement fulfils the idea of a fair and, at the same time, active social dialogue because the bank's works council was not only informed but also involved in developing the new arrangement. The innovative firm-level agreement relying on reciprocity further illustrates the pragmatic attitude to social dialogue in German companies. In this respect, it illustrates how both parties with potentially heterogeneous interests can achieve advantages in the new world of work.

7. CONCLUSIONS

In Germany, as in many other countries, the social partners are under pressure. Membership of trade unions and employers' associations has been declining since German reunification, so that they tend to represent a smaller fraction of employees and firms. Meaningful tripartite social dialogue is thus also endangered. Furthermore, the coverage rate in relation to the generalization of sectoral agreements, which is possible under certain conditions, has not compensated for the decline of sectoral agreements or firm-level collective arrangements. The gaps in employees' firm-level representation have become even wider owing to the higher proportion of employees who are also working in firms without a works council, an institution responsible for monitoring the implementation of sectoral collective agreements. This occurs especially in small and medium-sized companies and firms in the service sector. Currently, we are unable to show clear empirical evidence that firms' orientation towards sectoral agreements is doing much to mitigate the representation gaps.

Both the social partners and the government face considerable challenges. First, they need to cope with the consequences of the current economic recession and the associated weakening of the labour market. Unemployment, after falling for a number of years, is now stagnating and employment growth has slipped significantly (Bauer et al. 2019). Owing to the spreading of the Coronavirus and its far-reaching implications, not only for the German economy, the labour market will additionally be put under massive pressure (Weber et al. 2020). Secondly, the social partners need to find new strategies in the context of ongoing and accelerated structural change, particularly owing to digitalization. Thirdly, because of skill and, in some regions, even labour shortages, the social partners are facing the issue of quality of employment to a greater extent, particularly the use of non-standard forms of employment. Our analysis has focused on the interplay of state-level regulations and the industrial relations system.

Turning to the issue of managing the consequences of the economic crisis we demonstrated that during the Great Recession 2008–009 the re-regulation of short-time

working allowances was the decisive solution. This instrument relies on the cooperation of works councils; in addition, the social partners often agreed in sectoral agreements that employers would supplement the short-time allowances paid by the FEA. However, in the interviews we conducted, the social partners raised some concerns about the possible combination of short-time allowances and further training in times of slack product markets. Nevertheless, by concluding company-level pacts for employment and competitiveness, the social partners have extended their bargaining on wages, working time and further training, and may also negotiate about employment and investment, with the prospect of increasing the company's future competitiveness. The German industrial relations system has changed since the end of the 1990s (Carlin and Soskice 2009; Dustmann et al. 2014).

There is controversy not only between the social partners but also in the public debate concerning the prevalence and development of different employment forms. Even though both employers and employees are interested – for different reasons – in flexible forms of employment, during the past three decades we have witnessed waves of state-level deregulation as well as re-regulation of part-time, fixed-term and temporary employment, to mention the most important atypical forms. For various reasons, in particular the low level of unionized atypical workers, neither sectoral bargaining nor firm-level agreements deal with non-standard types of work to a significant extent. Instead, the social partners focus mainly on lobbying and tend to take a pragmatic approach. Regarding the important issue of equal treatment of workers, however, both sectoral and firm-level agreements still have potential.

The extensive changes that digitalization brings can be regarded as a major challenge for social partners. The current government is still planning to introduce an opening clause for the Working Time Law to allow social partners to test innovative and flexible working-time models. Since the beginning of 2019 the Qualification Opportunities Law has improved the opportunities for employers to train their employees. To date, however, we have not seen a strong increase in the use of this programme. As regards working-time issues, employers' associations demand more flexible regulations (for example, the maximum length of the working day), want to maintain labour volume and oppose far-reaching legal demands (for example, working from home). The unions strongly oppose this, indicating the current flexibility of working time regulations. In addition, they believe that employees should have a right to work from home. Even though dealing with the labour market issues that digitalization gives rise to at the sectoral level is still in its infancy, some agreements are already being concluded on working time and further training. Most of these activities are taking place at the firm level. Our two case studies therefore considered these issues. If the social partners are successful in developing solutions – tailored to the firm's and employees' specific requirements – to the increased need for flexibility and digitalization, they will provide clear evidence of the benefits of social dialogue. However, at the moment our analyses reveal a bundle of different strategies in different economic sectors and firms which could lead to more generally applicable solutions.

In summary, our examination has shown that the social partners have been more successful in combating short-term and urgent problems caused by economic crisis than in coping with the medium-term challenges caused by structural change and issues of decent work, such as changes in forms of employment. Furthermore, successful

interplay between the government and the social partners in the face of these medium-term challenges (alliances for the future of work) may, as a welcome side effect, revive the social dialogue and is likely to improve the image of the social partners considerably. It may also lead to increasing membership and higher coverage rates in the long term.

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