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Wage bargaining in Germany: The role of works councils and opening clauses

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IAB

IAB-Discussion Paper 5/2012

Articles on labour market issues

Wage bargaining in Germany

The role of works councils and opening clauses

Peter Ellguth
Hans-Dieter Gerner
Jens Stegmaier

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The role of works councils and opening clauses

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Mit der Reihe „IAB-Discussion Paper“ will das Forschungsinstitut der Bundesagentur für Arbeit den Dialog mit der externen Wissenschaft intensivieren. Durch die rasche Verbreitung von Forschungsergebnissen über das Internet soll noch vor Drucklegung Kritik angeregt und Qualität gesichert werden.

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Abstract

German employment relations are characterized by a distinct dual system: First, working conditions and wages are determined by industry level collective bargaining agreements. Second, on the establishment level the works council is responsible for employer-employee negotiations. But since the mid-1980s more and more areas of regulation were transferred from the industry to the establishment level using so called opening-clauses. Our analysis relies on rich German establishment data and reveals new insights in the institutional machinery of wage bargaining: While the existence of such clauses is related to higher wages (11 %), their application results in wages cuts of roughly the same size. Regarding works councils our results suggest that they are able to prevent negative wage effects of opening clauses on average.

Zusammenfassung

Das deutsche System der industriellen Beziehungen ist durch einen charakteristischen Dualismus gekennzeichnet: Einerseits werden in überbetrieblichen, sektoralen Tarifverträgen Arbeitsbedingungen und Löhne vereinbart. Andererseits regelt der Betriebsrat auf betrieblicher Ebene den Interessensausgleich zwischen Belegschaft und Betriebsführung. Seit Mitte der 1980er-Jahre wurden im Rahmen von Öffnungsklauseln jedoch zunehmend tarifvertragliche Regelungen auf betrieblicher Ebene verändert. Unsere Analysen basieren auf den Daten des IAB-Betriebspanels und gestatten einen besseren Einblick in die institutionellen Mechanismen der Lohnfindung. Wie sich zeigt, geht die Existenz von Öffnungsklauseln in Branchentarifverträgen mit einem höheren Lohnniveau (11 %) einher, deren betrieblicher Einsatz führt hingegen zu einer Lohnreduktion in ungefähr gleichem Ausmaß. Darüber hinaus legen unsere Ergebnisse den Schluss nahe, dass Betriebsräte in der Lage sind, die negativen Lohneffekte von Öffnungsklauseln zu verhindern.

JEL classification: J53, J31

Keywords: works council, worker participation, opening clauses, wages, collective bargaining agreements, organized decentralization

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1 Introduction

Many western countries have witnessed major changes in industrial relations in past decades. One major dimension of these changes is the centralization-decentralization dichotomy, with some economies shifting towards more decentralization, which is a shift from centralized bargaining at the national or industry-level towards single-employer bargaining (Flanagan 2008; Haipeter 2011; Traxler 1995; Whittall 2005). These changes in industrial relations are generally seen as long-term phenomena of a structural nature that can be traced back to the globalization of product and labor markets and to industrial and occupational restructuring (Bosch 2004; Flanagan 2008; Traxler 1995). However, as Traxler (1995) notes, decentralization must not be confused with disorganization because such shifts often yield new forms of coordination between the various levels. Moreover, if such measures of decentralization lead to more mutual trust, increasing cooperation on the establishment-level seems to be a complement rather than a substitute to industry-wide coordination mechanisms. Of course, there are diverse patterns of institutional evolution, but Germany, with its dual system of industry- and establishment-level bargaining, is a prime example of organized decentralization.

In Germany, wages typically have been determined above the establishment-level since the dual system was established. In this setting, works councils are typically not allowed to negotiate topics regulated in collective bargaining agreements (CBAs). However, an increasing number of areas of regulation have been transferred from the industry- to the establishment-level since the mid-1980s. Today, even wage bargaining, the heart of CBAs, gains more flexibility using so-called opening clauses. These clauses allow decreasing the collectively agreed-upon wage floors under certain circumstances. Because this development shifted distributional struggles from the industry-level to the establishment-level, works councils could then play a more pronounced role.[1] The effect of German works councils on a variety of aspects, such as establishment performance and employment issues, have received increasing attention in recent decades (see Jirjahn (2011) and Addison et al. (2004b) for an in-depth survey). Despite these advances, the knowledge of works councils' effects on wages is underdeveloped. More recent research generated new insights, but there is still no general consensus on the interplay between wages and works councils.

Our analysis brings together both strands - the notion of organized decentralization and the ongoing discussion regarding the effects of works councils on wages. On the basis of rich, German establishment-level data, we provide empirical results on the relationship between wages, works councils and opening clauses and deliver

[1] In the 'traditional' division of labor between sectoral- and establishment-level bargaining, works councils were able to affect wages indirectly by either influencing the wage classification or negotiating wage premiums.

new insights into the institutional machinery of decentralized wage bargaining and the interplay between the industry- and the establishment-level.

The paper is organized as follows. Section 2 introduces the institutional setting in Germany and considers the related literature. Section 3 describes the data and develops a simple but suitable empirical strategy. Section 4 discusses the findings. Section 5 presents the conclusions.

2 Institutional and theoretical background

German employment relations are characterized by a distinct dual system. First, working conditions (especially working hours) and wages are typically determined by industry-wide regional CBAs that are negotiated between unions and employer associations. Despite a pronounced decline in coverage since the mid-1990s (Ellguth and Kohaut 2011), CBAs are still the most important bargaining mechanism, especially in wage determinations, they provide homogeneous competitive conditions and keep industrial conflict out of the company. Second, working conditions are also negotiated at the establishment-level. In addition to company agreements or individual contracts, works councils are the crucial mechanism for employer-employee negotiations at the establishment-level in Germany. However, this distinction is not so clear in practice, as the industry-level often either serves as a reference point in decentralized negotiations (Bosch 2004) or retains some rights even in the case of opening clauses (see below).

A German works council consists of workers who are elected for a period of four years. Works councils can be formed in establishments with at least five workers, three of whom must be eligible for election. Because only the employees decide whether they wish to elect a works council, its formation is not automatic.[2] The legal basis of works councils, the Works Constitution Act, provides works councils with various substantial rights (regarding information, consultation, objection and even codetermination), but the Act also limits their capabilities. First, works councils are obligated to consider not only the welfare of the employees but also the welfare of the establishment, and they may not call for industrial action. Second, works councils are dedicated mainly to production issues (e.g., working hours or overtime) and personnel affairs. They usually have minimal influence on distribution issues (e.g., wages or payment schemes) because the latter are typically regulated by industry-wide agreements in Germany. Addison et al. (1997, 2004a) provide an in-depth description of German works councils.

According to economic theory, works councils potentially exert influence via collective voice, monopoly and insurance effects and rent-seeking actions (Hirsch et al. 2010; Jirjahn 2005). Which role do works councils play in the decentralization of

[2] There is also some literature arguing that sometimes even the management triggers (or is at least involved in) the formation of works councils (Mohrenweiser et al. 2011).

collective bargaining with regard to wages? Despite the formal restrictions on influencing wages, previous empirical work suggests that the presence of works councils is associated with higher wages (Addison et al. 1993, 2001, 2010; Gürtzgen 2010). Other findings suggest that this relationship between wages and works councils holds only for smaller establishments (Addison et al., 2000) or that there are no significant results (Kraft and Lang 2008). As our sample comprises only establishments with sectoral or regional CBAs[3], one should be wary that wage effects (like other effects) generally tend to be more pronounced when CBAs apply (Jirjahn 2011).

This traditional division of labor between centralized bargaining and codetermination at the establishment-level has undergone some changes because, as in many other countries, there was pressure to decentralize (e.g., Haipeter 2011; Katz 2004; Schnabel et al. 2006; Traxler 1995; Whittal 2005). Starting with working time issues (in the mid-1980s), areas of regulation were increasingly transferred to the establishment-level, and collective agreements provided only the framework for individually negotiated adjustments between works councils and establishment management. Since then, there has been an ongoing discussion on increasing establishment-level flexibility using opening or hardship clauses and company-level pacts for employment and competitiveness. The former are the legal precondition to negotiate collectively agreed-upon issues on the establishment-level. The latter is the main regulatory instrument used for employers and employees and their respective works councils to reach an agreement. However, company-level pacts are also used in establishments not covered by collective agreements. See Seifert and Massa-Wirth (2005) and Ellguth and Kohaut (2008) for more information on the preconditions, contents and incidence of company-level pacts.

Establishments can and could always exceed regulations from CBAs (Günstigkeitsprinzip), but only opening clauses provide a (legal) way to fall below these standards. Opening clauses are included at the industry-level in the CBAs and provide a vehicle to renegotiate collective bargaining issues (mostly working time and wage regulations) at the establishment-level within predefined scopes, limits and procedures. The actual realization of opening clauses leads to manifold designs: originally, opening clauses were introduced to provide companies with the option to fall below the standards if they run into economic trouble. Here, some type of crisis is an explicit precondition for the application of an opening clause. Increasingly, however, establishments that are economically viable can apply opening clauses; in many CBAs, the enhancement of the establishment's competitiveness is reason enough to undercut the collectively agreed-upon standards (Bosch, 2004). Regarding the degree of deviation from the CBA, some opening clauses enable the establishment-

[3] Establishments with establishment level-CBAs are excluded from this analysis because the application of opening clauses in this case is not connected with a switch from industry- to establishment-level wage bargaining.

level parties to deviate within the limits stated in the CBA. Other opening clauses give more space for establishment-level negotiations but retain veto rights for unions and employer associations. Sometimes, establishment-level specific arrangements are negotiated at the industry-level. See Schnabel (2003) and Kohaut and Schnabel (2007) for more comprehensive information on scopes, procedures and the use of opening clauses.

Opening clauses are negotiated for various topics, mainly working time issues and wages. According to Brändle et al. (2011), until the late-1990s, most opening clauses were focused on working time adjustments. In recent years, the contents have shifted. Lately, the vast majority of agreements comprise elements that allow the reduction of wages. Concerning the actual application of opening clauses, Kohaut and Schnabel (2007) find that establishments (in 2005) do so less frequently by agreeing on wage reductions. However, one has to be wary in interpreting this finding, as this outcome does not mean that wages might not be affected where working time issues are agreed upon. A reduction of working time may leave hourly earnings untouched but is often attended by a respective adjustment of monthly wages. We will come back to this issue in section 3.

In addition to the previously mentioned studies, there is only sparse literature on opening clauses: Kohaut and Schnabel (2007) analyze the determinants of the application of opening clauses with establishment-level data and show that establishments with performance problems typically apply such clauses more often. Bosch (2004) provides informative examples regarding the content and procedures of opening clauses. Examining the relation between export activity and the flexibility of collective bargaining agreements, Heinbach and Schröpfer (2008) find no clear evidence concerning the use of opening clauses. Research on the reasons why employers get out of a collective agreement (i.e., leave the employer association) reveals no dampening effect of opening clauses (Ellguth and Kohaut 2010). Finally, the existence of opening clauses seems to reduce job destruction rates, whereas the application of opening clauses shows no additional effect (Brändle and Heinbach, 2010). Regarding the interaction of opening clauses and works councils, there is – surprisingly - not much empirical evidence, although there should be a strong relationship: if opening clauses are applicable, works councils are brought back in as wage re-negotiations are now at the establishment-level. The following paragraph will discuss this issue in more detail.

In centralized bargaining between employer associations and unions, the implementation of opening clauses in CBAs should generally lead to higher wage demands. Fitzenberger and Franz (1999) argue that the introduction of opening clauses in CBAs induces unions to enforce higher wages, as this provides a way to skim off higher rents in well-off establishments, while it is still possible to adjust wages downwards in other establishments. If so, those establishments with opening clauses in their CBAs should be bound to pay higher wages than those without. On the other hand, the application of opening clauses should show a negative wage effect.

Whether used in times of economic crises or as an answer to challenges to the establishment's competitiveness, one main goal of opening clauses is to reduce labor costs. Therefore, a clear distinction between the existence of opening clauses in CBAs and their actual application on the establishment-level is crucial (Brändle et al. 2011). In summary, while we expect a positive association between the existence of opening clauses in CBAs and wages, there should be a negative effect on wages if such clauses are applied. Moreover, in the presence of works councils, it can reasonably be assumed that the negative wage effect of the application of opening clauses is dampened, as works councils should be engaged in protecting the employees' wages regardless of whether they are reduced due to wage cuts or a reduction of working time.

3 Data and econometric approach

This study uses the German IAB Establishment Panel, an annual survey of approximately 16,000 establishments that represents all industries and all establishment sizes. For in-depth information on the IAB Establishment Panel, see Fischer et al. (2009). Establishments with fewer than five employees are omitted, as the Works Constitution Act does not allow the formation of works councils in these establishments.

To assess the wage effects of the existence of opening clauses as well as of their application, we compare both the total monthly wage bill of establishments with opening clauses written in their CBAs and the total monthly wage bill of establishments that apply existing opening clauses,to establishments without opening clauses in their CBAs. Therefore, our inquiry is concentrated on establishments bound to industry-level CBAs. We use information from the years 2005 and 2007 because information on opening clauses is available only in those years.[4] First, the questionnaire asks whether the CBA the establishment is bound to contain opening clauses (existence of opening clauses). Second, as the application of opening clauses on the establishment-level is not automatic, the establishment is asked whether such clauses are applied (application of opening clauses). Therefore, not every establishment has the opportunity to employ opening clauses. In the first step, we start investigating the overall effect of the existence of opening clauses. We assume the following simple linear relationship at the establishment-level:

$$\log(Y) = \beta 0 + \beta 1WOCO + \beta 2OC + \beta 3OC*WOCO + x'\gamma + \varepsilon. \qquad (I)$$

Y is the establishment's total monthly wage bill per full-time equivalent employee. OC is a dummy variable for the existence of opening clauses in a given CBA. Therefore, in order to give an example, β2 gives the difference (in percent) with respect to the monthly wage bill per full-time equivalent between an establishment that is sub-

[4] Because the models are applied to pooled data, we allow for correlation within establishments. These correlations are figured by clustering the standard errors and by applying a modification of White's (1980) sandwich estimator.

ject to a CBA containing opening clauses and those not containing opening clauses. WOCO is a works councils dummy variable and OC*WOCO the respective interaction term between the existence of opening clauses and works councils. This specification allows us to identify the relationship between the existence of opening clauses and wages as well as the moderating effect of works councils and the existence of opening clauses.[5] However, from the motivation above, it directly follows that this specification is not sufficient because the treatment group is contaminated: Establishments under a CBA with opening clauses (OC=1) actually can but do not have to apply opening clauses. To obtain clean treatment groups, we introduce a distinction within our treatment group and extend our model:

$$\log(Y) = \beta 0 + \beta 1WOCO + \beta 2OC + \beta 3OC*WOCO + \beta 4OC2 + \beta 5OC2*WOCO + x'\gamma + \varepsilon. \qquad (II)$$

We add a variable for whether an establishment applies an opening clause (OC2=1) or not (OC2=0). Because we want to investigate the full sample, we replace OC2 with 0 if an establishment's CBA does not contain opening clauses. Otherwise, our model would suffer from perfect multicollinearity. Because we are interested in the interaction effect of works councils and the application of opening clauses, we add another interaction term (OC2*WOCO). This extension of our model ensures that we consider a well-defined treatment group. x' is a vector of potential confounders and ε is an idiosyncratic error term. Moreover, we also have a well-defined sample because we do not exclude establishments under CBAs without opening clauses. Excluding such observations would cast doubt on our analysis because it is reasonable to assume that whether an establishment can apply opening clauses, especially regarding wages, is not randomly determined.

A further natural extension of our empirical model would be a differentiation along the content of the opening clauses (wages or working time). However, our data set only contains the respective information for the application of opening clauses. Because we expect the effects of the existence and the application to be different and our econometric approach relies heavily on having information on the existence and application of opening clauses simultaneously, this extension is not feasible. Moreover, the focus on the application of wage-opening clauses might conceal one of the direct effects induced by the existence of a works council, namely, the prevention of the application of wage-opening clauses in favor of other types of opening clauses. As already mentioned above, it is clear that monthly wages are sensitive not only to wage cuts per se but also to changes in working time. Works councils should be interested in dampening wage reductions regardless of whether these reductions are induced by direct wage cuts or through a reduction of working time.

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[5] This moderating effect is especially included for technical reasons and allows a sufficient specification of our control group for another interaction term (see equation 2). Substantial implications are discussed in the next section.

Beyond our key variables, we control for a range of establishment characteristics, such as the proportion of qualified employees, the proportion of employees with fixed-term contracts, the proportion of casual workers, the proportion of part-time employees, the proportion of trainees, a churning rate, a dummy variable for the type of establishment (single establishment or part of a firm), the technical state of the equipment, a dummy variable for investment activities, a dummy variable if the establishment is of foreign ownership, industry dummy variables, establishment-size dummy variables and a region-based dummy variable. Table A1 provides additional information on our variables.

4 Empirical evidence

Table 1 summarizes basic information in our sample regarding opening clauses and works councils. More information on additional variables can be found in the Appendix (table A1). Because our sample is restricted to establishments with industry-level CBAs, a large part (nearly 60 %) of our observations exhibit works councils. Every third establishment has the opportunity to apply opening clauses and nearly one third of these establishments actually deploy opening clauses. More precisely, we find that roughly 39 % of all establishments with works councils and 21% without works councils are bound to CBAs with opening clauses. However, within these subsamples, every second establishment deploys opening clauses if applicable. The latter result suggests that the application - although not the consequences in terms of wages (as we will see in the regressions) - of an opening clause itself is generally irrespective of the works council's status. This result is astonishing because it would seem that works councils should try to avoid the impending application of opening clauses, which are connected at least to some austerities for the employees. However, it seems also plausible that the application of opening clauses is recognized not as the trigger of negative developments but as an opportunity to keep up competitiveness or, as a last resort, to act in the interest of the employees during times of poor performance.

Table 1
Existence and application of opening clauses in establishments with and without works councils (frequencies)

	Works councils = 0	Works councils = 1	Total
Existence of opening clauses = 0	2,693	2,997	5,690
Existence of opening clauses = 1	699	1,899	2,598
Application of opening clauses = 0	3,054	3,973	7,027
Application of opening clauses = 1	338	923	1,261

Source: IAB-Establishment-Panel 2005 & 2007. Basis: All observations of model (2a) in table 2.

With regard to our outcome variable, table 2 offers a surface impression of the relationship between wages, opening clauses and works councils. This table provides the same information as table 1 but distinguishes between establishments that pay below and above the median wage. First, the results show that establishments with higher wages exhibit CBAs with opening clauses more often than establishments

below the median wage (40% vs. 22%, respectively). Second, given the existence of opening clauses, establishments below the median wage apply such clauses more often than establishments above the median wage (53% vs. 45%, respectively). These results support our theoretical considerations because the existence of opening clauses is correlated with higher wages, while the application of such clauses is related to lower wages.

Table 2
Existence and application of opening clauses by wage level in establishments with and without works councils (frequencies)

	Works council = 0	Works council = 1	Total
Wage below median			
Existence of opening clauses = 0	2,023	1,019	3,042
Existence of opening clauses = 1	442	392	834
Application of opening clauses = 0	2,220	1,203	3,423
Application of opening clauses = 1	245	208	453
Wage above median			
Existence of opening clauses = 0	670	1,978	2,648
Existence of opening clauses = 1	257	1,507	1,764
Application of opening clauses = 0	834	2,770	3,604
Application of opening clauses = 1	93	715	808

Source: IAB-Establishment-Panel 2005 & 2007. Basis: All observations of model (2a) in table 2 with opening clauses. Multiple answers possible.

Table 3 provides the estimation results. The full results can be found in table A2 in the Appendix. As explained in section 3, model (1) comprises no information on the application of opening clauses. We find a positive significant coefficient for works councils and a positive (significant) coefficient for the existence of opening clauses and an insignificant interaction between both variables. Whereas the result regarding works councils - a wage premium of approximately 20 % - corresponds to that cited in previous literature[6], the finding on the existence of opening clauses suggests that employers literally 'pay' for potential establishment-level flexibility with (approximately 7 %) higher wages. Regarding the interaction term, a substantial explanation could be that employers in sectors with well-organized employees anticipate difficulties in enforcing wage reductions of the desired size.

Column 2 (table 3) gives the results for the application of opening clauses and the interaction with works councils. According to our theoretical considerations - if we take into account that the existence and the application of opening clauses should be associated completely different with wages - our results become very clear and straightforward to interpret: Again, there is a positive coefficient for works councils (20 %) and for the existence of opening clauses (11 %). Regarding the application of opening clauses, we find an expected negative - statistically and economically - significant coefficient, implying a wage reduction of roughly 9 %. Thus, there is evidence that opening clauses are employed to fall below collectively agreed-upon

[6] The results for the works council coefficient are quite similar to extant results (e.g., Addison et al. 2001).

wages. Fitzenberger and Franz (1999) argue that it is reasonable to assume that collectively agreed-upon opening clauses provide a way for unions to enforce higher wages. In our view, the existence of opening clauses can also be interpreted as a quasi-insurance to make higher wages affordable because, in cases of poor economic performance, establishments are able to cut back these high wages. This interpretation is reflected by the coefficients for the existence and application of opening clauses of roughly the same size but with opposed algebraic signs; Wald tests show that the remaining difference is unsystematic.

Works councils counterbalance this strategy and protect 'their' employees against wage cuts (works councils*application). While the application of opening clauses is related to lower wages (-9 %), our results imply that the application of opening clauses in establishments with works councils is connected with higher wages (7 %). Testing again for differences, we can even infer that the size of this counter-effect is roughly the size of the application of opening clauses because a Wald test reveals no statistically significant difference. In brief, works councils are generally able to prevent negative wage effects of opening clauses. However, in our view, these results should not be interpreted as sheer rent-seeking actions because it may also be true that works councils offer alternative or even better and sustainable solutions to economic problems than simple wage reductions.[7] Finally, it is worth noting that our results are robust with regard to a smaller sample comprising only establishments with 21 to 100 employees (see Appendix A2); here, works councils have virtually the same rights and should exhibit similar participation needs (Addison et al. 2001).

Table 3
Dependent variable: Ln(total wage per full time equivalent), Method: OLS

	(1)	(2)
Works councils (WOCO)	0.202***	0.202***
	(0.014)	(0.014)
Existence of opening clauses (OC)	0.067***	0.108***
	(0.017)	(0.023)
Existence*works councils (OC*WOCO)	-0.014	-0.047*
	(0.020)	(0.025)
Application of opening clauses (OC2)		-0.088***
		(0.030)
Application*works councils (OC2*WOCO)		0.073**
		(0.033)
Observations	8,299	8,288
R^2	0.44	0.44

Table displays β-coefficients and robust standard errors in parentheses,
***/**/* denotes significance on 1 %/5 %/10 %-level
Models contain also information on: number of employees (d), sector (d), region (d), proportion of skilled workers, proportion of workers with fixed-term contracts, proportion of casual workers, proportion of apprentices, single-establishment establishment (d), technology (1-5 scale), investments (d), foreign ownership (d); d=dummy variable(s). See Appendix for full results.
Source: IAB-Establishment-Panel 2005 & 2007.

[7] This leads to the topic of different types of works councils and their respective impact on bargaining outcomes. In contrast to the mainly qualitative research exploring in depth the typologies of works councils or management–works councils relations, there are only few corresponding quantitative analyses (Nienhueser 2009: 376).

Regarding the works councils, prior studies (e.g., Addison et al. 2006; Jirjahn 2011) emphasize that endogeneity presents a problem. Of course, unobserved factors could also account for such problems in the case of opening clauses. Because our analysis employs only a cross-sectional design, we cannot identify a causal structure. This outcome is mainly due to data limitations; coping with works councils' endogeneity already poses a challenge because there is only rare variation over time. Because our data comprises only two points in time, it is difficult to exploit the panel structure of our data. We also tried some instrumental variable approaches but possible instruments - even those used in other papers (e.g., Addison et al. 2010) - failed necessary tests. Notwithstanding the endogeneity problem, it also must be acknowledged that the results of this paper fit the institutional and theoretical story quite well.

5 Conclusion

Changes in industrial relations took shape in various ways, but many observers and scholars emphasized erosional developments. While there is evidence for such phenomena in Germany as well, such as the decline in union coverage, our paper shows that it is important to examine the micro level and its interplay with the industry level. Decentralizing bargaining structures is not simply tantamount to giving up bargaining power: opening clauses are typically designed to deviate from CBAs within predefined limits only, or they retain some kind of veto rights for the industry-level bargaining parties. However, as our analysis shows, there is a considerable interaction between the industry- and the establishment-level. First, we find wages to be higher in establishments that have the opportunity to apply opening clauses. This result can be interpreted in terms of a quasi-insurance. Establishments can afford higher (e.g., efficiency) wages more easily if they have the means to cut back wages in times of poor performance or severe competition. Second, and in line with this interpretation, we find lower wages if such clauses are actually applied. However, this result depends clearly on the works councils' status. The negative association is more pronounced in establishments without works councils but is virtually non-existent in establishments with such an institution. Therefore, we deliver the first evidence that works councils exhibit not only positive wage effects in general but also accomplish the task of safeguarding employees' demands in challenging times. Although the current analysis admittedly suffers from potential endogeneity problems, we feel that our results are sustainable because the theoretical considerations provide natural and convincing explanations for this scenario.

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Appendix

Table A1
Sample description

	Mean	Std. Dev.
Log(wages/full time equivalent)	7.722	0.457
Works council (yes=1)	0.591	-
Existence of an opening clause (yes=1)	0.152	-
Application of an opening clause (yes=1)	0.111	-
Existence of an opening clause and works council (yes=1)	0.313	-
Application of an opening clause and works council (yes=1)	0.229	-
Proportion of qualified employees	0.734	0.239
Proportion of employees with fixed term contracts	0.063	0.129
Proportion of casual workers	0.034	0.274
Proportion of part time employees	0.212	0.235
Proportion of trainees	0.050	0.075
Churning rate	0.050	0.167
Establishment is not part of a larger enterprise (yes=1)	0.600	-
Technical state of the establishment (1=very good,…, 5=bad)	2.157	0.743
Establishment invested in physical capital within the previous year (yes=1)	0.774	-
Establishment is under foreign ownership (yes=1)	0.076	-
5-9 employees	0.117	-
10-19 employees	0.117	-
20-49 employees	0.174	-
50-99 employees	0.142	-
100-199 employees	0.134	-
200-499 employees	0.163	-
500-999 employees	0.078	-
1000-4999 employees	0.060	-
5000 and more employees	0.005	-
Agriculture	0.018	-
Mining and quarrying, electricity or water	0.028	-
Manufacture of food	0.036	-
Manufacture of consumer goods	0.030	-
Manufacture of producer goods	0.078	-
Manufacture of investment goods	0.106	-
Construction	0.106	-
Trade, maintenance and repair	0.106	-
Transport, storage and communication	0.031	-
Financial services	0.052	-
Hotels and restaurants	0.025	-
Education	0.030	-
Health and social work	0.095	-
Business services	0.083	-
Other services	0.030	-
Public services	0.144	-
East Germany (yes=1)	0.289	-

Source: IAB-Establishment-Panel 2005 & 2007. Basis: All observations of model 2a in table A3.

Table A2
Dependent variable: Ln(total wage per full time equivalent), Method: OLS

	(1) > 4 Employees	(2a) > 4 Employees	(2b) 21-100 Employees
Works councils (WOCO)	0.202***	0.202***	0.164***
	(0.014)	(0.014)	(0.019)
Existence of opening clauses (OC)	0.067***	0.108***	0.110***
	(0.017)	(0.023)	(0.029)
Existence*works councils (OC*WOCO)	-0.014	-0.047*	-0.087**
	(0.020)	(0.025)	(0.039)
Application of opening clauses (OC2)		-0.088***	-0.116***
		(0.030)	(0.040)
Application*works councils (OC2*WOCO)		0.073**	0.123**
		(0.033)	(0.050)
Proportion of qualified employees	0.507***	0.506***	0.423***
	(0.024)	(0.024)	(0.038)
Proportion of employees with fixed term contracts	-0.054	-0.055	-0.110*
	(0.045)	(0.045)	(0.066)
Proportion of casual workers	0.028***	0.029***	-0.023
	(0.008)	(0.008)	(0.028)
Proportion of part time employees	-0.031	-0.033	0.028
	(0.028)	(0.028)	(0.042)
Proportion of trainees	-0.809***	-0.815***	-0.683***
	(0.074)	(0.074)	(0.104)
Churning rate	-0.175***	-0.177***	-0.178***
	(0.040)	(0.040)	(0.067)
Establishment is not part of a larger enterprise	-0.039***	-0.039***	-0.013
	(0.009)	(0.009)	(0.016)
Technical state of the establishment	-0.011*	-0.011*	-0.019*
	(0.006)	(0.006)	(0.010)
Establishment invested in physical capital within the previous year	0.037***	0.038***	0.066***
	(0.011)	(0.011)	(0.017)
Establishment is under foreign ownership	0.082***	0.083***	0.123***
	(0.015)	(0.015)	(0.034)
10-19 employees	0.136***	0.136***	
	(0.021)	(0.021)	
20-49 employees	0.185***	0.185***	-0.081
	(0.019)	(0.019)	(0.053)
50-99 employees	0.184***	0.183***	-0.073
	(0.020)	(0.020)	(0.053)
100-199 employees	0.170***	0.170***	
	(0.021)	(0.021)	
200-499 employees	0.196***	0.195***	
	(0.021)	(0.021)	
500-999 employees	0.203***	0.202***	
	(0.023)	(0.023)	
1000-4999 employees	0.230***	0.230***	
	(0.025)	(0.025)	
5000 and more employees	0.257***	0.258***	
	(0.051)	(0.051)	
Mining and quarrying, electricity or water	0.266***	0.267***	0.140***
	(0.045)	(0.045)	(0.057)
Manufacture of food	-0.039	-0.037	-0.220***
	(0.049)	(0.049)	(0.062)
Manufacture of consumer goods	0.200***	0.201***	0.093
	(0.046)	(0.047)	(0.061)

Cont'd			
Manufacture of producer goods	0.242***	0.243***	0.130**
	(0.043)	(0.044)	(0.051)
Manufacture of investment goods	0.264***	0.264***	0.098*
	(0.043)	(0.043)	(0.051)
Construction	0.171***	0.173***	0.036
	(0.042)	(0.043)	(0.047)
Trade, maintenance and repair	0.090**	0.092**	-0.048
	(0.043)	(0.044)	(0.049)
Transport, storage and communication	0.128***	0.129***	-0.027
	(0.047)	(0.047)	(0.055)
Financial services	0.248***	0.247***	0.213***
	(0.044)	(0.044)	(0.058)
Hotels and restaurants	-0.079	-0.074	-0.197***
	(0.051)	(0.051)	(0.058)
Education	0.259***	0.259***	0.186***
	(0.049)	(0.049)	(0.062)
Health and social work	0.145***	0.145***	0.061
	(0.044)	(0.045)	(0.056)
Business services	0.065	0.065	-0.070
	(0.046)	(0.046)	(0.055)
Other services	-0.027	-0.026	-0.062)
	(0.052)	(0.052)	(0.068)
Public services	0.138***	0.139***	0.055
	(0.043)	(0.044)	(0.050)
East Germany	-0.179***	-0.179***	-0.222***
	(0.010)	(0.010)	(0.017)
Observations	8,299	8,288	2,560
R^2	0.44	0.44	0.38

Table displays β-coefficients and robust standard errors in parentheses,
***/**/* denotes significance on 1 %/5 %/10 %-level

Source: IAB-Establishment-Panel 2005 & 2007.

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