I Z A Institute
of Labor Economics
Initiated by Deutsche Post Foundation

DISCUSSION PAPER SERIES

IZA DP No. 10899

Workplace Employee Representation and Industrial Relations Performance: New Evidence from the 2013 European Company Survey

John T. Addison
Paulino Teixeira

JULY 2017

I Z A Institute
of Labor Economics

Initiated by Deutsche Post Foundation

DISCUSSION PAPER SERIES

IZA DP NO. 10899

Workplace Employee Representation and Industrial Relations Performance: New Evidence from the 2013 European Company Survey

John T. Addison
Durham University Business School, University of South Carolina, and IZA

Paulino Teixeira
Universidade de Coimbra, CeBER, and IZA

JULY 2017

IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9
53113 Bonn, Germany

Phone: +49-228-3894-0
Email: publications@iza.org

www.iza.org

ABSTRACT

Workplace Employee Representation and Industrial Relations Performance: New Evidence from the 2013 European Company Survey

Using cross-country data from the European Company Survey, we investigate the relationship between workplace employee representation and five behavioral outcomes: strike incidence, the climate of industrial relations, sickness/absenteeism, employee motivation, and staff retention. The evidence is mixed. From one perspective, the expression of collective voice through works councils may be construed as largely beneficial. However, any such optimistic evaluation is heavily qualified by union organization and in particular workplace unionism. Establishment union density seemingly blunts the performance of employee workplace representation, elevating dissatisfaction at the expense of collaboration.

JEL Classification: J51, J52, J53, J83

Keywords: employee representation, works councils, union agency, collective bargaining, strikes, industrial relations quality, employee motivation and retention

Corresponding author:
John T. Addison
Department of Economics
Moore School of Business
University of South Carolina
1014 Greene Street
Columbia, SC 29208
USA
E-mail: ecceaddi@moore.sc.edu

I. Introduction

Cross-country information on the extent of workplace employee representation is sparse, and still less is known about its effects on behavioral and economic outcomes. But this form of worker participation has actively been encouraged in member states of the European Union as a matter of policy, based notions of industrial democracy (European Commission, 2002) and helping companies achieve economic competitiveness under the Lisbon Strategy (ETUI, 2009: Chapter 5). The impetus behind increased worker participation in the Community is long-standing. Thus, Article 27 of the Charter of Fundamental Rights of the EU states that "workers or their representatives must, at the appropriate level, be guaranteed information and consultation in good time in the cases and under the conditions provided by Community law and national laws and practices." Most directly, Directive 2002/14/EC of the European Parliament and the Council of 11 March 2002 sets down a general framework for informing and consulting workers at national level (Official Journal, 2002). It provides for a procedure of general, permanent, and effective information and consultation of workers in respect of recent and probable development in an undertaking's activities and economic situation, the structure and evolution of employment, and decisions that might lead to material changes in work organization and contractual relations.[1]

Yet the legislation lays down only main principles and minimal rules, allowing member states wide room for maneuver. Further, despite the 2009 Recast European Works Council Directive (Official Journal, 2009) that heralded moves toward a formal linkage between transnational information and consultation requirements and those at the local and national levels (a process that has been described as *articulation*), the current state of play is that worker participation rights at establishment/undertaking level vary considerably between member states. Also, movement toward systematization may have been countered by other Community initiatives such as the Commission's REFIT strategy (European Commission, 2013a,b), whereby all legislation deemed no longer fit for purpose – including information and consultation rights – is to be withdrawn. Nevertheless, even if there is considerable heterogeneity in worker participation rights at local company and cross-border levels, and in board-level representation, there is undoubted movement toward consolidating the linkages between the various levels of worker participation (see European Commission, 2015).

Despite having reasonable knowledge of the types, if not the prevalence, of workplace employee representation in member states (e.g. Fulton, 2013; Synthesis Report, 2007), there was

little investigation of the determinants and consequences of that representation until the publication of the European Company Survey(s). Examples of the former include Bryson, Gomez, and Willman (2004) and Addison et al. (2017a) for the U.K. and Germany, respectively. Examples of the latter are Addison and Belfield (2001) and Bryson, Charlwood, and Forth (2006) for the U.K., Fairris and Askenazy (2010) for France, and van den Berg et al. (2011) for the Netherlands. Cross-country quantitative evidence was rarer still, largely comprising comparisons of Germany and Britain by Addison et al. (2000), of Norway and the U.K. by Bryson and Dale-Olson (2008), and of France and Britain by Bryson, Forth, and Laroche (2011).

In contrast, from the outset considerable attention has been accorded the economics of workplace representation, drawing in particular upon notions of exit and voice (Freeman and Medoff, 1984) – and it will be recalled that REFIT has latterly elevated the criterion of economic efficiency. The emphasis of collective voice on information exchange makes strikes a natural subject of study, particularly where these are viewed as bargaining mistakes. Similarly, reduced exit behavior makes labor retention a no less important topic of inquiry. Further, when the model is extended to include governance, contract enforcement and good industrial relations the logic for examining most other aspects of firm performance becomes compelling. Thus, in addition to strikes,[2] productivity, productivity growth, investment in tangible and intangible capital, as well as employment growth and survival become legitimate empirical concerns of the model. A welcome development of a model hitherto restricted to the union institution was the explicit consideration of workplace employee representation and, in the light of rent seeking behavior, the identification of exemplary voice institutions in this regard (Freeman and Lazear, 1995) and issues such as the prohibition of the strike weapon.

Since a major focus of this paper is upon (the avoidance of) conflict, another aspect of competitive pressure might be the withering away of the strike (but see Hyman, 1972). This phenomenon is often construed as the result of the decisions of firms facing international competition to (re)organize production methods so as to reduce conflict. Enter the phenomenon of endogenous technology to reduce the likelihood or the cost of bargaining mistakes (see, in particular, Blanchard and Philippon, 2006). We will attempt to capture elements of this endogeneity in an unusual manner. Specifically, in our examination of workplace behavior we will argue that the decentralization of, or the introduction of greater flexibility into, collective bargaining will help recast the workplace into a form more suited to address and respond to

changes in the external environment, to become more fit for purpose as it were. Here, we shall have recourse to external assessments of the efficacy of bargaining systems (Visser, 2013; Jansen, 2014; Braakmann and Brandl, 2016). Although we recognize that such collective bargaining arrangements should be integrated with workplace employee representation (see Addison et al., 2017b), for present purposes the two will be treated as distinct routes toward the same end.

By way of summary, then, the sequential themes running through this empirical inquiry are *legal* (namely European Union initiatives tending to favor workplace employee representation largely upon efficiency grounds), *theoretical* (collective voice offering a basis for innovation in industrial relations), and *institutional* (the design of a workplace-based entities offering improved conflict resolution). The latter theme may be expected to encompass the wider industrial relations architecture including the locus of collective bargaining.

The plan of the paper is as follows. We begin with a review of the collective voice model. We then offer a thumbnail sketch of the literature using the European Company Surveys as these studies also inform the present treatment. The unique dataset is then described. Our empirical results are next provided along the dimensions of strike incidence, and (subjective) measures of the industrial relations climate, employee motivation, and staff retention. A concluding section discusses the implications of our study for conflict resolution and identifies areas of future inquiry.

II. Worker Representation: Theoretical Considerations

The key theoretical construct in examining the effects of employee workplace representation is collective voice. In the model, *voice* is to be contrasted with *exit*. The latter is a market mechanism: faced with a divergence between desired and actual conditions at the workplace, the worker quits the firm to search for better employment. However, there is an alternative to exit. The worker may instead engage in voice, discussing with his/her employer the conditions that need changing without quitting the job. In the parent model of Hirschman (1970), the context is the product market rather than the labor market such that exit corresponds to switching goods and voice to complaining about the product. In Hirschman's model, the key variable signifying whether or not the individual will engage in voice or exit behavior is *loyalty*. The more loyal the consumer, the less likely exit behavior and the greater the probability that redress will be sought through voice. There is no mention of loyalty in the collective voice/institutional response model, developed by Freeman and Medoff (1984) in a unionized setting, but it is a similar stimulus that drives behavior

in both cases, namely, a deterioration in conditions in the Hirschman model (Boroff and Lewin, 1997) and dissatisfaction in the collective voice model. That being said, voice is more than the expression of dissatisfaction with current conditions. This in turn raises the two questions: (a) might not voice be more pro-productive if it came from more satisfied workers; and (b) might not voice sourced through a union be adversarial – more an expression of dissatisfaction with the status quo than a communication channel facilitating continuing innovation in labor contracts?

Perhaps the best-known element of the Freeman-Medoff model is the union role in providing information. The labor market context is important here, and is one of continuity rather than spot market contracting because of on-the-job skills specific to the firm and the costs attaching to worker mobility and labor turnover. Given the information problem in such complex and multidimensional continuity markets, what mechanisms are available to elicit information on worker preferences or discontent? Quit behavior can provide such information either inferentially or directly (via exit interviews). However, the collective voice model contends that such information is likely to suffer from selection biases, from problems of motivating the worker to disclose information, and finally from the sheer cost of the process of trial and error in determining the efficacy of contract innovations.

Collective voice through the agency of a union may outperform individual activity for various reasons. One reason is the public goods problem of preference revelation. Nonrival consumption of shared working conditions and common workplace rules create a public goods problem of preference revelation. Without some collective form of organization there will be too little incentive for the individual to reveal his or her preferences since the actions of others may produce the public good at no cost to that individual. Unions collect information about the preferences of all workers and "aggregate" them to determine the social demand for such public goods. Substituting average preferences for marginal preferences and the arbitraging of worker preferences may be efficient in such circumstances, even if this conclusion sidesteps the question of whether or not autonomous unions are the only form of collective voice.[3]

The expression of collective voice is expected to reduce quits, absenteeism and malingering. The reduction in quits is expected to lower hiring and training costs and increase firm-specific investments in human capital. Lower quits may of course also occasion less disruption in the functioning of work groups. Interestingly, apart from the reduction in quits as a result of the union providing direct information about worker preferences as described earlier, the

transmission mechanism between voice and performance is opaque in the voice model. Moreover, in discussing the reduction in quits the union voice model appears to emphasize dissatisfaction. Conceptually, voice is described as directing attention to workplace problems, encouraging expressions of discontent, and keeping dissatisfied workers from quitting (Freeman, 1976, p. 367), even at the same time as good industrial relations are viewed as a key to improved productivity (Freeman and Medoff, 1984, p. 165). Empirically, expressed worker dissatisfaction is reported to be higher in union regimes (Freeman and Medoff, 1984, Chapter 12). Nevertheless, the difference in expressed complaints between union and nonunion labor is interpreted as an expression of democracy rather than as indicating a true shortfall in satisfaction, the difference between 'true' and 'voiced' dissatisfaction reflecting the nature of the voice institution" (p. 139).

The remaining aspect of voice is governance. The context is again the continuity of the employment relation. Governance refers to the policing or monitoring of incomplete employment contracts and thus includes the use of grievance and arbitration procedures and other mechanisms to mitigate what are seen as problems stemming from the authority relation. Such procedures should also help improve the flow of information between the two sides. The problem is that the specialized procedural arrangements typically associated with union regimes are not unique to those settings (e.g. Williamson, Wachter, and Harris, 1975). These include promotion ladders, formal grievance procedures, and the application of the seniority principle. Thus, the bargaining power possessed by idiosyncratically-trained job incumbents produces the governance apparatus. In the absence of unions, therefore, the firm and its workers may agree on procedural arrangements limiting the hazard of unconstrained idiosyncratic trading. Nevertheless, a union may make it easier for the firm to negotiate and administer these practices (Riordan and Wachter, 1983). Acceptance of this argument raises the issue that the extent and form of voice is in part an endogenous variable, partly determined by firms. (For a transaction cost model of *nonunion* forms of worker representation based on this reasoning, see Kaufman and Levine, 2000.)

Freeman (1976, p. 364) and Freeman and Medoff (1984, p. 11, fn. 11) claim the union governance aspect of the voice model is quite consistent with the modern contracts literature, the argument being that the presence of a union can facilitate long-term efficient contracting of this nature. They argue that a union specializing in information about the contract and in the representation of workers can prevent employers from engaging in opportunistic behavior. Workers may withhold effort and cooperation when the employer cannot credibly commit to take

their interests into account. Thus, fearing dismissal, workers may be unwilling to invest in firm-specific skills or disclose information facilitating pro-productive innovations at the workplace. The formation of a union and the introduction of a system of industrial jurisprudence is one way of protecting employees' interests. In this way, unions may generate worker cooperation, including the introduction of efficiency-enhancing work practices. This argument presupposes that the commitment problem cannot be solved by reputation effects.

But if a union can make credible the employers' *ex ante* promises (Malcomson, 1983), there must be some threat of credible punishment by the union which hinges on the union having bargaining power. In other words, the governance argument depends on union monopoly power. The criticism would then be that voice can be kept distinct from power only by making voice so narrow – by which is meant information exchange – that it may lose much of its explanatory punch, while if it is broadened to increase its reach it becomes simply another facet of the exercise of power.

Subsequent development of the union voice model recognizes the problem of bargaining power. We refer to Freeman and Lazear's (1995) purpose-built analysis of the employee workplace representation – specifically, the works council and its "codetermination" (or joint governance) power at the workplace. In this treatment, there is explicit recognition of the bargaining/hold up problem hitherto skirted in union voice and which dogs the voice solution to the information problem in continuity labor markets. Freeman and Lazear argue that codetermination will be underprovided by the market because institutions that give power to workers will affect the distribution as well as the size of the joint surplus. The content of collective voice is also spelled out in more detail in this treatment in terms of a continuum bounded by information provision at one extreme and participation/codetermination at the other, with consultation occupying the broad middle ground. Thus, the joint surplus of the firm is said to increase with the progression from information exchange through consultation to participation. Among other things, information rights can help verify management claims about the state of nature, rendering them credible to the workforce and avoiding costly disputes that can threaten the enterprise's very survival. Consultation for its part allows new solutions to production and other problems by reason of the non-overlapping information sets of the two sides and the creativity of discussion. Finally, participation or codetermination rights increase the joint surplus by providing workers with more job security and encouraging them to take a longer-run view of the firm.

However, Freeman and Lazear recognize that unless the rights of the works council are somehow constrained, they will give rise to a bargaining problem. They argue that the workers' share in the joint surplus grows with the surplus while that of capital declines both relatively and absolutely. The workers' share rises because knowledge and involvement are power, so that the same factors that cause the surplus to rise also cause profitability to fall, with the result that workers will demand too much power/involvement because their share will continue to rise after the joint surplus has peaked. Similarly, employers will either oppose works councils or vest them with too little power because profits decline even as the surplus is increasing. Some means of third-party regulation limiting bargaining power has thus to be found if the societal benefits of worker voice are to be realized. In this context, Freeman and Lazear see the *German* institution as attractive. First, German works councils cannot strike (under the "peace obligation" or *Friedenspflicht*). Second, neither can they formally engage in bargaining over wages and other conditions of employment unless authorized to do so under the relevant industry-level or regional collective bargaining agreement. In this respect, the authors speak of a potential decoupling of the factors that determine the size of the surplus from those that determine its distribution made possible by labor law and the dual system of industrial relations. Left open is whether or not there is a *sufficient* decoupling in practice.

The latter point makes it clear that in any analysis of employee workplace representation the attitude and role of labor unions should be taken into account (see van den Berg et al, 2013). First of all, and to repeat, companies that are bound by an agreement reached at sectoral or industry level may well experience fewer frictions between management and the workplace representation body at firm level because the distributional conflicts regarding the terms and conditions of employment have already been settled. Second of all, the information and consultation body may have strong links with unions at the workplace level, with the result that union dominated works councils (or local union entities) may have a much smaller deliberative function because of their potential distributive role. These effects may offset simple one-sided expectations as to the effects of employee workplace representation. Thus, we can look to the effects of union-dominated works councils (or union dominated clubs – see below). We can also examine whether workplace representation has more beneficial effects under sectoral bargaining. More generally, the direct effects of collective bargaining on outcome indicators can be examined, albeit in a framework that takes recognition of the decentralization and hybridization of bargaining modes.

III. Literature Review

In the interests of economy, we propose to restrict our review of the cross-country literature to that using the European Company Survey (ECS). The key articles using the ECS are van den Berg et al. (2013), Jansen (2014), Forth, Bryson, and George (2016), and Braakmann and Brandl (2016). The first and the third study focus squarely on employee workplace representation and on (one measure of) firm performance and (three) behavioral outcomes, respectively.[4] The second study examines the broader issue of the organizational power of trade unions in explaining strike activity. The final study is something of an outlier in that it is the first to use the most recent ECS for 2013, while its consuming interest, like that of the wider literature, is upon firm performance and collective bargaining proper. Its importance is that it offers a unique way of combining individual firm data on collective bargaining, as contained in the ECS, with a national typology of bargaining systems building on the decentralization and hybridization of bargaining systems. The present study in its focus on employee workplace representation, while taking account of collective bargaining realities and innovations, will both reflect and update much of the ECS literature.

The study by Forth, Bryson, and George (2016) is notable in distinguishing between union and works council forms of employee representation, noting the considerable variation across countries in the share of workplaces with either form of representation, with some countries having just one type (e.g. the works council in Germany and Austria, as compared with exclusive trade union workplace representation in Sweden) and yet others with both forms but in which one type or the other dominate. Three behavioral outcomes are examined.[4] While admitting the ambiguity of the collective voice model with respect to the overall climate of industrial relations – on the grounds that this may deteriorate in the presence of effective workplace 'social dialogue' – the authors emphasize the standard prediction of that model that quit rates will be reduced by effective voice. The tenor of industrial relations variable measures either a "quite strained" or a "very strained" work climate, while the quit rate proxy is management-identified problems in retaining staff. In addition to these outcome indicators, Forth, Bryson, and George also consider employee motivation, namely circumstances in which the manager respondent reports low employee motivation.

The authors regress their three binary indicators on trade union/works council representation and a full set of workplace characteristics. In a first specification, the authors consider the contribution of a simple presence of any trade union or works council representation

as opposed to no workplace representation. In a second specification, they replace this generic measure with three categorical indicators, namely trade union representation only, works council representation only, and the presence of both union and works council representation. The result of the former exercise is that the presence of either form of representation is associated with a greater probability of observing a strained work climate. However, workplace representation as measured plays no role in influencing motivation or staff retention. Turning to the second specification, only the dual channel regressor is statistically significant; specifically, workplaces with *both* works council and trade union representation are not only more likely to have a strained climate but on this occasion also to report problems with staff retention.

In their study of workplace representation and economic performance, again using the 2009 ECS, van den Berg et al. (2013) estimate the impact of "the information and consultation body" on the economic performance of the firm, as proxied by the subjective evaluation of the management respondent of the 'economic situation' of the firm on a 5-point Likert scale. The model also includes the presence or otherwise of a trade union in the firm. In a second specification, the 'attitudes' of the employee representation body, either positive or negative as assessed by management, enter as added regressors.[5]

Although no formal distinction is drawn between types of workplace representation, the hallmark of this study is the prior grouping of nations into five clusters, according to whether worker representation conforms to the Germanic, French, Anglo-Saxon, Scandinavian, or Transitional Economy models. Controversially, it is reported that the information and consultation body has a *negative* impact on performance in the Germanic 3-nation cluster (Germany, Austria, and the Netherlands) but is very positive in the 2-nation Anglo-Saxon cluster (the U.K. and Ireland). The interpretation offered is that where worker involvement is voluntary the firm may benefit from installing such representation. It is also reported that union presence has a negative effect in the French and Transitional Economy clusters "underscoring the more active and ideological role of trade unions in these parts of the EU" (van den Berg et al., 2013: 42).[6] The combined effect of union presence and worker representation for the Germanic and Anglo-Saxon clusters reinforces the differential effects of worker representation noted earlier.

The authors' second specification, which introduces the attitude variables, suggests that a positive management view of the worker involvement process is associated with improved economic performance in all but the Anglo-Saxon and Transitional Economy clusters. In short, a

positive mutual relationship between management and the worker representation agency is said to stimulate firm performance. Further, the combination of union presence and a positive attitude generally produces a beneficial effect on firms' economic performance.

Again using data from the 2009 ECS, Jansen (2014) examines strike incidence. His focus is upon union organization arguments rather than employee workplace representation per se. (And, in the latter context, note that Jansen does not consider differences in types of worker representation obtaining in a single country, actually referring to all such bodies as "works councils.") In examining how company-level effects differ across countries, Jansen deploys a mixed effects logistic regression procedure, a procedure that is followed in the present study. In drawing on separate, non-ECS indicators, he also considers the effect of cross-national differences in overall union density, number of union confederations, and union decentralization together with their cross-level interaction effects. Union decentralization is defined as the inverse of the authority unions have over local branches, and we shall also have recourse to this particular argument in the present paper. Given Jansen's focus on union organizational factors, it is hypothesized that union decentralization should have weakened the positive association between union density and upon strikes.

Abstracting here from differences in national trade unions systems – other than to note the finding that density, number of confederations, and degree of decentralization are found to independently increase strike activity – and focusing therefore upon his company-level effects specification, Jansen reports that the likelihood of a strike is some 1.4 times greater where a collective agreement is negotiated at a level higher than company level. For their part, the proportion of union members in the workforce, multi-unionism, and union penetration of the "works council" are all positively related with strike incidence. For example, companies in which trade union members make up more than one-half of the local works council are 1.3 times more likely to confront a strike than their counterparts where there is no union majority. Interestingly, however, there is no suggestion that multi-unionism weakens the organizational capacity of union-dominated councils.

The hallmark and contribution of the Jansen study is its attempt to make concrete potential differences in union organization on strike incidence, including cross-level effects of national indicators. Less helpful, however, is the failure to differentiate between types of employee workplace representation both within and between countries.

The final study considered here is the sole treatment to use data from the 2013 ECS. It examines the effect of the collective bargaining system on a measure of the labor productivity of the firm (based on management responses to the ECS question: "Since the beginning of 2010, has the productivity of this establishment … Increased … Decreased … Remained about the same … Not applicable … Don't know"). This subjective productivity measure, largely collapsed into a single dummy variable taking the value of 1 if labor productivity increased, 0 otherwise, is regressed on a comprehensive, 12-element categorization of bargaining type that combines information in the ECS on the collective agreement obtaining in the firm (individual bargaining, company or establishment, sectoral, and national) with external information on integrative interaction between bargaining units (i.e. whether single-level sectoral bargaining and two-and three-level bargaining systems can be regarded as either horizontally coordinated/uncoordinated or vertically governed/ungoverned, respectively (see, inter al., Braakmann and Brandl, 2016; Traxler and Brandl, 2012; Traxler and Kittel, 2000). The study controls for industry sector, company and worker characteristics, and a detailed set of macro arguments. It also includes dummies for the presence of a "works council" and a union representative, and membership of an employer organizations as controls for country differences in the industrial relations environment. However, only coefficient estimates for the 12 bargaining types are reported, the omitted category being individual bargaining.

It is found for the base specification that, vis-à-vis the reference category of individual bargaining, the share of companies with productivity increases is significantly higher for coordinated sector and national bargaining in single-level systems; for governed company and sector bargaining, and governed company and national bargaining in two-level systems; and for governed company, sector, and national bargaining in three-level systems. These results are robust to an alternative estimation procedure (ordered probit), to the potential fuzziness of the external classification for several countries, and to the possibility that specific countries are driving the results.

The authors ultimately conclude that coordinated sector collective bargaining, governed company and sector bargaining, and governed national, sectoral and company level agreements – identified with Austria, Germany, and the Nordic countries, respectively – are associated with superior relative performance, whereas company and individual level bargaining regimes post only an "average" performance rating compared with all other categories.[7] We shall replace the 4-

element ECS typology of collective bargaining with the 12-element Braakmann-Brandl measure in some of our own specifications to see if adds to our understanding of behavioral outcomes.

IV. Data and Methods

Our main data source is the 2013 European Community Company Survey (ECS). This is an establishment-based inquiry, comprising 32 European nations. We focus here on the 28 member countries of the European Union. The raw data was downloaded from the U.K. Data Service site at *https://www.ukdataservice.ac.uk/*.

The Survey includes detailed information on employee representation at the workplace, which is a key aspect of our analysis. However, various data manipulation procedures on the original files were required in order to establish the categories relevant for the empirical investigation. In particular, since employees at establishment level may be represented by a works council or a union body, or both, in the latter case we identify the two mutually exclusive categories of a *prevalent works council* or a *prevalent union* to define which entity – the works council or the union body – is dominant. The enabling procedure was to create a 1/0 dummy taking the value of 1 whenever the interviewee was a member of the works council; and mutatis mutandis for the prevalent union case. This coding was, however, preceded by a procedure in which the original representation bodies (a total of seven different types that are fully documented in the file *7735_reports.pdf* available at the U.K. Data Service site) were classified into formal and informal categories. Accordingly, any ad hoc form of representation was flagged as informal, and as a result we have that any prevalent union (works council) is necessarily based on an existing formal representation body.

The 2013 ECS survey has two separate components: the Employee Representative Questionnaire (ER) and the Management Questionnaire (MM). In the former, the interviewee is questioned on various issues related to labor organization, namely the union density at establishment level and whether the employee representation body has a majority of trade union members. For its part, the MM questionnaire requests information on a variety of establishment characteristics, including the existing type of employee representation at the workplace and the type of collective agreement if any.

By construction, all the units in the ER survey have an employee workplace representation body. They are necessarily part of the MM sample as only MM units with a workplace

representation entity are eligible to answer the ER questionnaire. As a result, the MM sample comprises some 27,000 units while the ER sample contains only 7,600 firms. Furthermore, given that the two sets of information are provided in separate files, in order to use the MM and ER variables in a single frame we have to link the two files. Our matching procedure generated a matched MM-ER sample of some 1,400 units. In other words, the confidentiality constraints are such that only a fraction of the original ER sample can be safely linked to the MM sample. From the full MM sample we also extract the subset of establishments with formal workplace representation to obtain a reduced MM sample of some 13 thousand units. No ER variables are available in this case.

The definition and sample means of the selected MM and ER variables are given in Appendix Table 1. The first set of variables are the outcome indicators, namely strikes incidence (extracted from the ER sample) and three subjective industrial relations performance indicators as expressed by management. The second group of variables relate to workplace representation and union organization, and it includes union density at establishment level as well as union membership of the employee workplace representation bodies. The latter information allows us to define the union-dominated workplace representation categories. Establishments are also grouped by employment size, industry affiliation, and private/public ownership. Other establishment characteristics include information on whether an establishment is a single entity or a part of a wider organization, its workforce composition, and various measures of organizational change and performance-based pay.

The information on the existence of collective agreements is assembled in two different ways. The first reclassifies the raw information (i.e. company, sector, and national agreements) according to the categories of company level, higher than company level, and mixed level. (Individual bargaining between worker and firm remains the omitted category.) This re-classification is done to facilitate comparison with the existing literature based on the 2009 ECS (e.g. Jansen, 2014). In the second case, we follow Braakmann and Brandl (2016) to derive a country- and establishment-based classification with twelve collective bargaining system dummies, individual bargaining again serving as the reference category (see section III). Finally, we deploy two country-level synthetic indicators of union decentralization and bargaining centralization. This classification has a basis in the ICTWSS database (see Visser, 2013). Bargaining centralization captures bargaining level, articulation, and use of opening clauses.

Union decentralization captures union power in local wage bargaining, appointment of workplace representatives, finances of local branches, strike funds and strike vetoes. In both cases, the indicator is given by increasing order, on a 0-5 and 0-7 scale, for the bargaining centralization and union decentralization, respectively.

For the MM sample, and focusing on workplace organization and collective bargaining types, workplace representation is present in approximately 50 percent of the cases, with the prevalent union and prevalent works council entities having about the same share (unweighted statistics). In turn, in one-third of the cases establishments are not covered by any type of collective agreement, while single-level company, sector, and national bargaining are present in one-quarter of the cases. The remaining instances comprise either two- or three-level bargaining situations.

For the MM-ER matched sample, union density averages 44 percent. For establishments with a works council, a majority of representatives having a trade union affiliation is found in 26 percent of the cases, while in the case of union clubs the percentage is reduced to 19. For its part, collective agreement coverage is clearly higher, at 86 percent, than in the MM sample, where it is 66 percent. The matched MM-ER sample is also relatively more populated with works councils, which account for approximately 60 percent of the total.

We test the role of the selected institutions on industrial relations performance by specifying a two-level mixed-effects logit model that controls for a wide set of observables, including performance-based pay, organizational change, workforce composition, industry affiliation, establishment size, private ownership, single establishment, and training participation. The goal is to shed further light on whether employee representation at the workplace is viewed predominantly as a collective voice or as a vehicle of contestation/discontent.

V. Findings

The first set of results is given in Table 1 and it is exclusively based on the Management questionnaire. The selected outcomes/industrial relations performance indicators are all subjective measures and cover industrial relations climate, absenteeism, worker retention and worker motivation. Regression results are given in the four main columns of the table.

[Table 1 near here]

As hypothesized earlier, the voice mechanism is in principle favorable to firm performance, and as a result either the works council or union workplace representation body will be associated

with a more favorable industrial relations ambiance, all else constant. But it is also possible that worker representation is birthed in dissatisfaction and serves mostly as a vehicle of dissatisfaction/contestation; in this case its presence exacerbates conflict and employers are likely to perceive 'collective voice' unfavorably. Since both effects are likely to be at work, it remains to be seen which prevails. Potentially critical in this assessment is also the role of collective bargaining institutions that may promote better relations or compensate for perceived disadvantages of workplace representation.

The statistical evidence in main column A of the table indicates that, firstly, the prevalent worker representation body (be it a union club or a works council) is strongly associated with a pessimistic management view of the prevailing state of the climate of industrial relations in the establishment compared with a situation where there is no formal employee workplace representation at all. In contrast, applicable collective agreements, especially those containing terms and conditions set at higher than company level, are seen as favorable. Note that the role of these institutions – workplace representation and collective bargaining – is found to be largely insensitive to inclusion of synthetic, country-wide indicators, flagged here by the union decentralization indicator and the bargaining centralization index. The former is marginally statistically significant in column (2) and negative in sign, while the latter, in column (3), lacks statistical significance at conventional levels.

Replacing the four types of collective agreements included in column (1) by the detailed, 12 collective bargaining categories (no collective bargaining/individual bargaining is the omitted group) there is the suggestion that the three-level system of company, sector, and national bargaining is associated with a more positive view of the quality of industrial relations, while coordinated sector bargaining seems marginally favorable as well. In turn, on these results there is no strong indication that coordination in single level systems or governed bargaining in multi-level systems are playing a decisive role in generating positive management perceptions of industrial relations performance. Management seems generally happier if the wage setting is nor restricted to individual bargaining or to the company level, seeing wider agreements as broadly favorable to a good working environment, largely irrespective to the degree of governability or coordination. Taking wages out of competition might not be alien to this result.

The results on absenteeism are given in main column B. Note that if, in panel A, workplace representation is dominantly seen as offering a collective voice of discontent, the institution will

also be likely to be associated with a higher level of absenteeism. This indeed seems to be the message: both works councils and union representation bodies are strongly positively associated with higher absenteeism. Collective bargaining now yields few benefits in this respect in comparison with the results for the climate of industrial relations. Higher absenteeism might of course be expected to the extent that workplace representation no less than collective bargaining protects workers from its consequences.

In principle, if voice substitutes for exit, then workers should be less likely to quit as their concerns are addressed by management. Yet we find no suggestion in main column C of voice being associated with reduced difficulties in retaining staff, echoing the rather pessimistic results first reported in main column A. We note parenthetically that we do find that training reduces the difficulties in retaining staff: the regression coefficient for this argument being both negative and highly statistically significant. (This finding and results for other regressors not identified in the table are available from the authors upon request.)

It is also interesting to note that collective agreements are generally favorable to worker retention, and that increasing (decreasing) levels of bargaining centralization (union decentralization) are also seen as broadly beneficial to retaining workers in the firm, as shown in columns (2) and (3). Further, the coefficients of all the more detailed collective agreement categories identified in column (4) are always negative, and in four cases statistically significant at conventional levels (vis-à-vis the reference category of individual bargaining between worker and firm).

Finally, in main column D, we present the results for the fourth outcome indicator. We find no confirmation that worker representation is associated with higher perceived levels of worker motivation. Indeed, the evidence is to the contrary. For employee workplace representation secured through a union club at least there is a strong direct association with low motivation. As was the case for staff retention, a higher degree of union decentralization elevates problems (although on this occasion greater bargaining centralization does not ameliorate them). Finally, observe that the more detailed disaggregation of collective bargaining systems offers little value added.

In Table 2, we control directly for union ‘influence’ on workplace representation (strictly, dominance) and for establishment-level union density, in addition to the set of covariates included in Table 1. Since this key information on labor organizational power is only available in the ER questionnaire, the corresponding regressions can only be carried out by matching the two subsets

of the ECS database (viz. the ER and MM samples), unless one wishes to jettison all observables contained in the MM questionnaire and limit oneself to the more restricted arguments of the ER survey. The cost of using the matched sample is transparent: as the extended set of worker representation/labor organization variables are unavailable for those MM establishments without any formal workplace representation (these units simply do not participate in the ER questionnaire), the results in Table 1 are from a necessarily smaller sample than in the full MM sample case, as was described in the data section. And since we are unable to link all the ER units with the MM survey, the regressions provided in Table 2 are obtained from a further reduced sample of less than 1,400 establishments. In exchange, however, we are able to deploy an alternative indicator of industrial relations performance – the strikes incidence variable – which is only available in the ER questionnaire. By construction, the *no workplace representation* comparator is absent from the regressions.

[Table 2 near here]

We begin our discussion of the results contained in Table 2 by reporting findings for the four subjectively defined behavioral indicators considered earlier. We will then turn to the association between employee workplace representation and our objective indicator of the quality of industrial relations, namely strike incidence. In the first place, union density at the workplace, on its own, does not seem to improve management's assessment of the perceived quality of industrial relations. The sample here, it will be recalled, is exclusively made up of establishments with a formal employee workplace representation body. Given the results in the corresponding main column of Table 1, higher union density is likely to flag a more hostile voice. In this case, management perceptions will be that contestation is higher and industrial relations quality duly lower. No parallel effect can be found in main columns B through D, where the union density term is at best only weakly statistically significant. The role of collective agreements in panels A through D is also less pronounced than in Table 1. A similar result is found for the bargaining system arguments; in general, the associated coefficient estimates are largely statistically insignificant, and certainly never statistically significant at the 0.01 level. A plausible explanation is that once worker representation is at workplace (which, by construction, is true for all establishments in this sample), the wider collective bargaining environment becomes less of a factor.

The key finding, however, is the negative coefficient of the union-dominated union club in main column A, which is significant at the 0.05 level. Thus, if dominated by union members, union workplace representation bodies are not associated with a good workplace climate. For its part, absenteeism seems to have no strong connection with unionism at the workplace, as none of the variables contained in the workplace representation/labor organization subset is statistically significant. Regarding worker retention, union dominance is again unfavorable in the case of the union club albeit only at the 0.10 margin. In turn, motivation tends to be lower in the case of both the union club and the works council if they are union dominated. However, the findings are again only weakly statistically significant.

The results for strike incidence given in the final main column of Table 2 are statistically stronger. Under the hypothesis that strikes are mainly bargaining failures, the expectation would be that strikes will be less in evidence whenever there is an employee workplace representative body in place functioning as a proper channel for voice. It will be recalled that there is no absence-of-workplace-representation comparator in the matched sample. We can only distinguish between union- and nonunion-dominated works councils, union- and nonunion-dominated union clubs, and nonunion-works council and nonunion-dominated union clubs. The indications are that: (a) works councils are generally associated with a lower strike incidence compared with the union counterpart (if both are non-union dominated); and (b) that strike incidence is increasing if the majority of the works councilors are members of a trade union. The suggestion is that in the former case the expression of voice is more collaborative in works councils than in union clubs, while in the latter case the (collective) voice of discontent is more in evidence. We note parenthetically that we do control for a variety of sources of discontinuity or disruption at plant level (e.g. changes in pay system and in working hours). The reported effects are therefore net of the impact arising from measured/observed organizational changes.

Based on the evidence contained in Table 2, union and works council representation seem not to have played a dramatically distinct role in influencing our five behavioral outcomes. Of course, sample size is a factor, while the strong downward trend in unionization is also likely to make identification of these effects increasingly harder to detect.

One final way to make a further distinction between unionism and workplace representation (but not between workplace representation and its absence) is simply to use a relevant subset of the MM sample. In this case, we only select establishments with a formal

workplace representation body (either a works council or a union club), perforce without considering whether the representation body has a majority of union members and without controlling for union density at establishment level. Other things equal, if works councils enhance voice rather than amplify discontent, their presence should be associated with more favorable outcomes. The results of this implementation are remitted to Appendix Table 2, the expectation being that a pro-business, collaborative voice will be more often found in establishment in which worker representation occurs through the vehicle of a prevalent works council.

Main column A of Appendix Table 2 confirms at the 0.01 level that the industrial relations climate at the workplace is superior in works council establishments. From main column B there is also the suggestion that absenteeism is lower in works council establishments (statistically significant at the 0.05 level). Worker motivation in main column D is also strongly associated with works council representation. Only in the case of worker retention is statistical significance lacking. The comparator in all these cases it will be recalled is the union counterpart of the works council.

Overall, in comparing employee workplace representation with its absence, we do not obtain a clear rejection of the hypothesis that collective voice is mostly disputatious. Also, in those cases where there is information on trade union majorities, the evidence suggests that the collective voice of discontent seems to dominate. Finally, when comparing works councils and union bodies, there is a clear indication that the former vehicle is associated with the better industrial relations performance from the standpoint of management.

VI. Conclusions

It should come as no surprise that results obtained using the 2013 ECS differ from those of earlier surveys. This tendency has been noted in successive waves of other cross-section datasets, most notably the British WIRS/WERS wherein profound changes in the effect of unions on establishment performance (widely interpreted) have been detected since 1980. The British changes occurred in the 1990s during which interval there was a sharp fall in the share of individuals whose wages were set by collective bargaining. The changes in finding are charted by Addison and Belfield (2001, 2004), who also comment on the role of differences in specification. The changes in the 2013 ECS findings vis-à-vis those reported in the literature for the 2009 ECS might in part reflect the withering away of the strike (on which see in particular Godard, 2011) as

well as allegedly important changes in the architecture of collective bargaining that we sought to accommodate. A further issue is raised by the absence of a firm identifier for the MM and ER survey components in the 2013 survey. Our attempt to match the two components resulted in a loss in sample size with consequences for the statistical power of some our estimates.

Largely confining our concluding remarks to the employee workplace representation results, let us review our findings together with their consistency with our priors. Beginning with *strike incidence*, and hence our smallest sample, there was some suggestion that the effects of workplace employee representation were both beneficial and influenced by unionism. That is to say, nonunion-dominated works councils were associated with lower strike incidence than their counterpart (nonunion-dominated) union entities, while union-dominated works councils were associated with greater strike activity than other works councils. Both results are in accordance with our priors since we regard works councils as the exemplar of collective voice, and less distracted by distributive bargaining where the majority of their membership is nonunion. Union density at the workplace was associated with greater strike incidence as might be expected on union organizational grounds, although we reported that firm-level bargaining seemingly offered the best regime from a strikes perspective.

However, we found no suggestion in this (MM-ER) sample that works councils were associated with a better industrial relations climate than union bodies – or that either prevalent works councils or prevalent unions in the full sample were positively associated with the IR quality outcome vis-à-vis the situation where worker representation was absent. If one argues that a better industrial relations climate is associated with fewer strikes, these results appear somewhat at odds with the strikes data. The caveat is the rather strong positive association between coverage by a collective agreement (versus no coverage) and industrial relations quality in the full sample and also in part for the matched sample.

Also, we reported that one of the strongest predictions of the collective voice model – that worker representation should improve labor retention/lower labor turnover was not borne out for either of the above samples. Nevertheless, employee motivation was adjudged least favorable in prevalent union clubs (for the full sample) and for union dominated work councils and union clubs in the matched sample, again pointing to some distrust among the manager respondents of more activist employee workplace representation.

Our strongest (and most consistent) results of all are for the reduced full sample where works council and union representation situations are explicitly compared (although with no possibility of controlling for union dominance or union density at establishment level). Here we find that the effect of collective bargaining on climate is mostly favorable (now at higher than the firm level). We also report seemingly favorable effects of prevalent works councils for three out of four behavioral indicators. Thus, prevalent works councils (vis-à-vis prevalent union clubs) are associated with improved motivation, lower absenteeism, and a better industrial relations climate. Only their effects on retention are statistically insignificant.

On net, we would interpret these results as offering only qualified support for the collective voice model. In particular, workplace unionism blunts the performance of employee workplace representation. Specifically, union-dominated workplace representation seemingly nurtures dissatisfaction at the expense of collaboration. Favorable outcomes of workplace representation, where observed, are negated where union members constitute a majority of the relevant workplace agency.

Finally, there is the vexed question of the influence of collective bargaining decentralization and hybridization. Our findings on this front suggest that a low level of union decentralization is in general favorable to the quality of industrial relations, as perceived by management, and to labor retention and the motivation of workers as well. The evidence for the bargaining centralization index is more mixed, with perhaps the strongest result being that a high level of centralization appears to be associated with reduced labor turnover. For its part, the refinement produced by combining the type of collective agreement applicable to the establishment with country-wide indicators of coordinated and governed bargaining did not prove to be enlightening. Clearly, however, more work is needed in this area given the seeming conflict between our behavioral indicators on the one hand and firm (and macro) performance outcomes on the other.

Endnotes

1. The legislation complements the information and consultation provisions of extant law on collective dismissals (Directive 98/59/EC of 20 July 1998), transfers of undertakings (Directive 2001/23/EC of 12 March 2001) and, in the transnational context, on European Works Councils (Directive 94/45/EC of 22 September 1994).

2. Although not without controversy, the maintained hypothesis that strikes have adverse consequences for firm performance has found favor in the industrial relations literature; see, for example, Katz, Kochan, and Gobeille (1983), Kleiner, Leonard, and Polarski (2002), Krueger and Mas (2004).

3. A second public goods dimension of the workplace stems from the nature of the input of effort. Without some form of collective organization, the individual's incentive to take into account the effects of his actions on others may, just as with preference revelation, be too small. Collective organization might therefore increase output through a joint determination of effort inputs – though perhaps less controversially so through increased cooperation between workers in continuity labor markets.

4. As a practical matter, the main thrust of this examination of the 2009 ECS, is to provide an explanation of the pattern of workplace employee representation. The incidence of workplace representation is found to be strongly correlated with the degree of centralization of collective bargaining. Reflecting the costs side, workplace representation is also more prevalent where there is legislative support for social dialogue at workplace level and where public confidence in unions is higher. Finally, an important determinant of union workplace representation, but not works council presence, is industry rents.

5. The two variables are based, respectively, on the following assessments of the manager respondent: (i) "The employee representation helps us in a constructive manner to find ways to improve the workplace performance"; and (ii) "The involvement of employee representation often leads to considerable delays in important management decisions."

6. That said, the authors report an absence of any effect emanating from unions in the Scandinavian cluster, despite what is described as their strong position and fundamentally positive attitudes.

7. See also Addison (2016); Devicenti, Manello, and Vannoni (2016).

References

Addison, John T. 2016. "Collective Bargaining Systems and Macroeconomic and Microeconomic Flexibility: The Quest for Appropriate Institutional Forms in Advanced Economies." *IZA Journal of Labor Policy* 5:19. DOI: 10.1186/s40173-016-0075-8.

Addison, John T. and Clive Belfield. 2001. "Updating the Determinants of Firm Performance: Estimation Using the 1998 UK Workplace Employee Relations Survey." *British Journal of Industrial Relations* 39(3): 341-366.

Addison, John T., and Clive R. Belfield. 2004. "Unions and Establishment Performance: Evidence from the British Workplace Industrial/Employee Relations Surveys." In Phanindra V. Wunnava (ed.), *The Changing Role of Unions – New Forms of Representation*, pp. 281-319. Armonk, New York: M.E. Sharpe.

Addison, John T., W. Stanley Siebert, Joachim Wagner, and Xiangdong Wei. 2000. "Worker Participation and Firm Performance: Evidence from Germany and Britain," *British Journal of Industrial Relations* 38(1): 7-48.

Addison, John T., Paulino Teixeira, André Pahnke, and Lutz Bellman. 2017a. "Demise of a Model? The State of Collective Bargaining and Worker Representation in Germany." *Economic and Industrial Democracy* 48(2): 1-42.

Addison, John T., Paulino Teixeira, Katalin Evers, and Lutz Bellmann. 2017b. "Collective Bargaining and Innovation in Germany: A Case of Cooperative Industrial Relations?" *Industrial Relations* 56(1): 73-121.

Blanchard, Olivier, and Thomas Philippon. 2006. "The Quality of Labor Relations and Unemployment." NBER Working Paper No. 10590. Cambridge, MA: National Bureau of Economic Research.

Braakmann, Nils, and Bernd Brandl. 2016. "The Efficacy of Hybrid Collective Bargaining Systems: An Analysis of the Impact of Collective Bargaining on Company Performance in Europe." MPRA Paper No. 70025 (Munich Personal RePEc Archive). Available at: https://mpra.ub.uni-muenchen.de/70025/

Boroff, Karen E., and David Lewin. 1997. "Loyalty, Voice, and Intent to Exit a Firm: A Conceptual and Empirical Analysis." *Industrial and Labor Relations Review* 51(1): 50-63.

Bryson, Alex, Rafael Gomez, and Paul Willman. 2004. "The End of the Affair? The Decline in Employers' Propensity to Unionize." In John Kelly and Paul Willman (eds.), *Union Organization and Activity*, pp. 129-149. London: Routledge.

Bryson, Alex, Andy Charlwood, and John Forth. 2006. "Worker Voice, Managerial Response and Labour Productivity." *Industrial Relations Journal* 37(5): 438-455.

Bryson, Alex, and Harald Dale-Olson. 2008. "A Tale of Two Countries: Unions, Closures, and Growth in Britain and Norway." CEP Discussion Paper No 867. London: Center for Economic Performance, London School of Economics and Political Science.

Bryson, Alex, John Forth, and Patrice Laroche. 2011. "Evolution or Revolution: The Impact of Unions on Workplace Performance in Britain and France." *European Journal of Industrial Relations* 17(2): 171-187.

Devicienti, Francesco, Alessandro Manello, and Davide Vannoni. 2016. "Technical Efficiency, Unions and Decentralized Labor Contracts." IZA Discussion Paper No. 10292. Bonn: Institute for Labor Economics.

ETUI. 2009. *Benchmarking Working Europe 2009*. Brussels: European Trade Union Institute

European Commission. 2013a. "Commission Staff Working Document. 'Fitness Check' on EU Law in the Area of Information and Consultation of Workers." SWD (2013) 293 final, Brussels, 26 July 2013.

European Commission. 2013b. "Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Regulatory Fitness and Performance (REFIT): Results and Next Steps." COM(2013) 685 final. Brussels, 2.10.2013

European Commission. 2015. "Consultation Document: First Phase Consultation of the Social Partners under Article 154 TFEU on a Consolidation of the EU Directives on Information and Consultaion of Workers." C(2015) 2303 final. Brussels: 12.4.2015.

Fairris, David, and Philippe Askenazy. 21010. "Works Councils and Firm Productivity in France." *Journal of Labor Research* 31(30: 209-229.

Forth, John, Alex Bryson, and Anitha George. 2016. "Explaining Cross-National Variation in Workplace Employee Representation." IZA Discussion Paper No. 9963. Bonn: Institute of Labor Economics. (Forthcoming in *European Journal of Industrial Relations*).

Freeman, Richard B. 1976. "Individual Mobility and Union Voice in the Labor Market." *American Economic Review, Papers and Proceedings* 66(2): 361-68.

Freeman, Richard B., and Edward P. Lazear. 1995. "An Economic Analysis of Works Councils." In Joel Rogers and Wolfgang Streeck (eds.), *Works Councils, Consultation, Representation and Cooperation in Industrial Relations*, pp. 27-50. Chicago, Ill.: University of Chicago Press.

Fulton, L. 2013. *Worker Representation in Europe*. Labour Research Department and ETUI. Produced with the assistance of the SEEurope Network. Available at http://www.worker-participation.eu/National-Industrial-Relations.

Godard, John. 2011. "What Has Happened to Strikes?" *British Journal of Industrial Relations* 49(2): 282-305.

Hirschman, Albert O. 1970. *Exit, Voice, and Loyalty*, Cambridge, Mass.: Harvard University Press.

Hyman, Richard. 1972. *Strikes*. Glasgow: Fontana/Collins.

Jansen, Giedo. 2014. "Effects of Union Organization on Strike Incidence in EU Companies." *Industrial and Labor Relations Review* 67(1): 61-85.

Katz, Harry C., Thomas A. Kochan, and Kenneth R. Gobeille. 1983. "Industrial Relations Performance, Economic Performance, and QWL Programs: An Interplant Analysis." *Industrial and Labor Relations Review* 37(1): 3-17.

Kaufman, Bruce E., and David I. Levine. 2000. "An Economic Analysis of Employee Representation." In Bruce E. Kaufman and Daphne Gottlieb Taras (eds), *Nonunion Employee Representation – History, Contemporary Practice, and Policy*, pp. 149-175. Armonk, N.Y.: M. E. Sharpe.

Kleiner, Morris M., Jonathan S. Leonard, and Adam M. Pilarski. 2002. "How Industrial Relations Affect Plant Performance: The Case of Commercial Aircraft Manufacturing." *Industrial and Labor Relations Review* 55(2): 195-218.

Krueger Alan B., and Alexandre Mas. 2004. "Strikes, Scabs and Tread Separations: Labor Strife and the Production of Defective Bridgestone/Firestone Tires." *Journal of Political Economy* 112(2): 253-289.

Malcomson, James M. 1983. "Trade Unions and Economic Efficiency." *Economic Journal* 93 (Supplement 1983): 50-65.

Official Journal. 2002. "Directive 2002/14/EC of the European Parliament and of the Council of 11 March 2002 Establishing a General Framework for Informing and Consulting Employees in the European Community – Joint Declaration of the European Parliament, the Council and the Commission on Employee Representation." OJ L 80 of 23.3.2002, pp. 29-34.

Official Journal. 2009. "Directive 2009/38/EC of the European Parliament and of the Council of 6 May 2009 on the Establishment of a European Works Council or a Procedure in Community-scale Undertakings and Community-scale Groups of Undertakings for the Purposes of Informing and Consulting Employees (Recast)." OJ L122/28 of 16.5.2009, pp. 28-44.

Riordan, Michael H., and Michael L. Wachter. 1983. "What Do Implicit Contracts Do?" Unpublished paper, University of Pennsylvania.

Synthesis Report. 2007. Directive 2002/14/EC Establishing a General Framework for Informing and Consulting Employees in the European Community. SYNTHESIS REPORT (Prof. Edoardo

Ales – University of Cassino). Available at: file:///C:/Users/ecceaddi/Downloads/FINAL%20SyR-18Oct07%20(2).pdf.

Traxler, Franz, and Bernd Brandl. 2012. "Collective Bargaining, Inter-Sectoral Heterogeneity and Competitiveness: A Cross-National Comparison of Macroeconomic Performance." *British Journal of Industrial Relations* 50(1): 73–98.

Traxler, Franz, and Bernhard Kittel. 2000. "The Bargaining System and Performance." *Comparative Political Studies* 33(9): 1154–1190.

van den Berg, Annette, Yolande Grift, and Arjen van Witteloostuijn. 2011. "Managerial Perceptions of Works Councils' Effectiveness in the Netherlands." *Industrial Relations* 50(3): 497- 513.

van den Berg, Annette, Yolanda Grift, Arjen van Witteloostuijn, Christopher Boone, and Olivier van der Brempt. 2013. "The Effect of Employee Workplace Representation on Firm Performance. A Cross-Country Comparison within Europe." Discussion Paper Series No. 13-05, Tjalling C. Koopmans Research Institute, Utrecht School of Economics, University of Utrecht.

Visser, Jelle. 2013. "Wage Bargaining Institutions – From Crisis to Crisis" European Economy, Economic Papers 488. European Commission Directorate-General for Financial Affairs, Brussels.

Williamson, Oliver E., Michael L. Wachter, and Jeffrey E. Harris. 1975. "Understanding the Employment Relation: The Analysis of Idiosyncratic Exchange." *Bell Journal of Economics* 6(1): 250-278.

Table 1: Workplace Representation, Establishment-Level Bargaining, National Bargaining Systems, and Subjective Assessment of Industrial Relations, Management Survey Sample, 2013 ECS

Outcome indicator	**A: Industrial relations climate (1 if good or very good)**				**B: High level of sickness/absenteeism**			
Variables	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Worker representation (Reference=none):								
Prevalent works council	-0.020***	-0.021***	-0.023***	-0.019**	0.033***	0.032***	0.034***	0.033***
Prevalent union club	-0.056***	-0.056***	-0.056***	-0.053***	0.044***	0.044***	0.048***	0.046***
Collective agreement type (Reference=no collective agreement):								
Company level	0.017*	0.016*	0.014		-0.016*	-0.016*	-0.015*	
Higher than company level	0.027***	0.025***	0.027***		-0.005	-0.006	-0.009	
Mixed	0.029***	0.027***	0.029***		0.005	0.005	0.003	
Country-level synthetic indicators:								
Union decentralization		-0.011*				-0.008		
Bargaining centralization			0.002				0.014	
Bargaining system (Reference=individual bargaining):								
BB_1				0.011				-0.011
BB_2				0.021*				-0.0001
BB_3				0.017				0.006
BB_4				0.012				-0.012
BB_5				0.030*				0.022
BB_6				0.009				0.003
BB_7				0.044				-0.027
BB_8				-0.035**				0.052***
BB_9				0.032				-0.018
BB_10				-0.007				-0.019
BB_11				0.069***				-0.048**
BB_12				0.041**				-0.017
Number of observations	20,231	20,231	19,025	20,394	20,205	20,205	20,369	20,369

Table 1 (cont.)

Outcome indicator	**C: Difficulties in retaining staff**				**D: Low motivation of employees**			
Variables	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Worker representation (Reference=none):								
Prevalent works council	0.002	0.002	0.002	0.002	0.002	0.003	0.005	0.002
Prevalent union club	0.004	0.004	0.001	0.004	0.054***	0.054***	0.048***	0.054***
Collective agreement type (Reference=no collective agreement):								
Company level	-0.015**	-0.014	-0.016**		-0.009	-0.008	-0.011	
Higher than company level	-0.008	-0.007	-0.004		-0.003	-0.001	-0.004	
Mixed	-0.019***	-0.018**	-0.013*		-0.010	-0.008	-0.011	
Country-level synthetic indicators:								
Union decentralization		0.018***				0.022***		
Bargaining centralization			-0.022***				-0.016	
Bargaining system (Reference=individual bargaining):								
BB_1				-0.016**				-0.010
BB_2				-0.013				-0.016
BB_3				-0.010				-0.022
BB_4				-0.006				0.004
BB_5				-0.012				-0.026
BB_6				-0.009				-0.009
BB_7				-0.050*				-0.036
BB_8				-0.015				0.015
BB_9				-0.027*				-0.019
BB_10				-0.004				0.018
BB_11				-0.023				-0.045*
BB_12				-0.034**				-0.007
Number of observations	20,175	20,175	18,975	20,338	19,979	19,979	18,802	20,137

Notes: The two-level mixed-effects logit model includes the following additional variables: performance-based pay, organizational change, workforce composition, industry affiliation, establishment size, private ownership, single establishment, and training participation. The full set of selected variables is given in Appendix Table 1. The actual implementation in Stata uses the *meglm* command. In the interests of economy, the corresponding standard errors are omitted from the table. ***, ** and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 2: Workplace Representation, Establishment-Level Bargaining, National Bargaining Systems, and Assessment of Industrial Relations, Employee Representative-Management Matched Sample, 2013 ECS

Outcome indicator	**A: Industrial relations climate (1/0 dummy: 1 if good or very good)**				**B: High level of sickness/Absenteeism**			
Variables	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Worker representation/Labor organization:								
Union density at the workplace	-0.008**	-0.009**	-0.008**	-0.008**	0.00001	-0.0002	-0.0008	0.0004
Works council	-0.530*	-0.529*	-0.541*	-0.515*	-0.313	-0.221	-0.179	-0.393
Union-dominated union body	-1.078**	-1.084**	-1.123**	-1.105**	0.080	0.049	-0.386	0.079
Union-dominated works council	-0.327	-0.343	-0.427	-0.308	-0.154	-0.187	-0.106	-0.187
Collective agreement type (Reference=no collective agreement):								
Company level	0.099	0.091	0.087		0.306	0.286	0.400	
Higher than company level	0.324	0.288	0.418*		0.203	0.132	0.147	
Mixed	0.394*	0.372	0.483*		0.463*	0.421*	0.451*	
Country-level synthetic indicators:								
Union decentralization		-0.082				-0.215**		
Bargaining centralization			0.042				0.192	
Bargaining system (Reference=individual bargaining):								
BB_1				0.109				-0.056
BB_2				0.475*				-0.311
BB_3				0.740				0.140
BB_4				0.173				-0.010
BB_5				0.632				-0.095
BB_6				0.272				0.270
BB_7				0.007				-0.455
BB_8				0.397				0.785**
BB_9				0.321				-0.247
BB_10				-0.346				-1.589**
BB_11				1.088*				0.298
BB_12				-0.123				0.396
Number of observations	1,365	1,365	1,271	1,371	1,363	1,363	1,269	1,368

Table 2: (cont.)

	C: Difficulties in retaining staff				**D: Low motivation of employees**				**E: Strike incidence**			
Variables	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Worker representation/Labor organization:												
Union density at the workplace	-0.009*	-0.008	-0.007	-0.009*	0.001	0.001	0.0001	0.0008	0.011*	0.011*	0.009	0.010*
Works council	-0.325	-0.293	-0.267	-0.371	-0.234	-0.226	-0.203	-0.225	-0.843*	-0.842*	-0.797*	-0.925*
Union-dominated union body	1.070*	1.129*	1.020*	1.001*	0.833*	0.843*	0.678	0.863*	0.953	0.953	0.807	0.791
Union-dominated works council	-0.426	-0.381	-0.261	-0.472	0.541*	0.559*	0.509	0.529*	0.815*	0.830*	0.787*	0.894*
Collective agreement type (Reference=no collective agreement):												
Company level	-0.156	-0.167	-0.039		0.103	0.107	0.024		-1.128**	-1.11**	-1.22**	
Higher than company level	0.101	0.167	0.240		-0.155	-0.131	-0.184		-0.072	-0.045	-0.192	
Mixed	-0.115	-0.079	0.075		-0.294	-0.277	-0.327		-0.045	-0.024	-0.109	
Country-level indicators:												
Union decentralization		0.156*				0.051				0.064		
Bargaining centralization			-0.269**				-0.088				0.779**	
Bargaining system (Reference=individual bargaining):												
BB_1				-0.173				0.096				-0.651
BB_2				-0.147				-0.207				0.236
BB_3				0.360				0.253				0.473
BB_4				0.458				-0.059				0.490
BB_5				-0.625				-0.472				-0.652
BB_6				0.312				-0.450				0.863*
BB_7				-0.204				0.228				1.100
BB_8				0.057				-0.003				0.109
BB_9				-0.385				-0.445				-0.416
BB_10				0.484				-0.337				-0.754
BB_11				-0.846				-1.000*				-0.198
BB_12				0.218				0.286				0.458
Number of observations	1,360	1,360	1,266	1,366	1,341	1,341	1,249	1,346	1,366	1,366	1,272	1,372

Notes: The two-level mixed-effects logit model includes three workplace representation dummy variables flagging, respectively, the presence of a works council, a union-dominated union, and a union-dominated works council. Accordingly, given that in this sample a formal worker representation body is necessarily present at the establishment, the coefficient on the first variable (works council) gives the nonunion-dominated works council effect vis-à-vis the nonunion-dominated union body; the second (i.e. the union-dominated union coefficient) gives the union-dominated union effect vis-à-vis the non-union dominated union body; and the third gives the union-dominated works councils effect vis-à-vis the works council without union domination. The model includes the following additional variables: industry affiliation, establishment size, private ownership, single establishment, and training participation. The set of control variables containing performance-based pay, organizational change and workforce composition are reduced to include only the statistical significant variables. This procedure is intended to avoid a further reduction in the estimation sample. The implementation in Stata uses the *melogit* command. In the interests of economy, the corresponding standard errors are omitted from the table. ***, ** and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

Appendix Table 1: Variable Definition and Means of Selected Variables, 2013

Variable	Mean (MM Sample)	Mean (MM-ER matched sample)	Definition
Industrial relations performance:			
Strike incidence	N.A.	11	1/0 dummy: 1 if there has been a stoppage or strike in the establishment in the last 12 months
General work clime (Manager view)	83	79	(IR_quality_MM)1/0 dummy: 1 if the general work climate in the establishment is very good or good
Absenteeism (Manager view)	16	25	1/0 dummy: 1 if there is a high level of sickness leave
Difficulties in staff retention (Manager view)	11	11	1/0 dummy: 1 if there are difficulties retaining employees
Low employee motivation (Manager view)	19	23	1/0 dummy: 1 if there is low motivation of employees
Worker representation/Labor organization:			
Prevalent union workplace body	23	37	1/0 dummy: 1 if a union or a prevalent union representation is present.
Prevalent works council	25	63	1/0 dummy; 1 if a works council or a prevalent works council is present
No formal worker representation	52	---	
Establishment union density	N.A.	44	Union membership at the establishment
Union-dominated union body	N.A.	19	1/0 dummy: 1 if a union or a prevalent union representation is present and the majority of representatives are trade union members
Union-dominated works council	N.A.	26	1/0 dummy: 1 if a works council or a prevalent works council is present and the majority of representatives are trade union members
Collective agreement:			
No collective agreement	34	16	No collective agreement
Company level	14	19	Company level
Higher than company level	33	39	Higher than company level
Mixed	19	26	Mixed (i.e. company level and higher than company level)
Changes in organization:			
Changes in the remuneration system	32	34	1/0 dummy: 1 if major changes in the remuneration system were introduced in the past three years. In 2013 the variable is defined simply as ‘changes’ in the remuneration system
Changes in the work process	39	45	1/0 dummy: 1 if changes in the organization of the work process were introduced in the past three years. In 2013 the variable is defined as changes in ‘ways to coordinate and allocate the work to employees’
Changes in the working time	22	29	1/0 dummy: 1 if changes in the working time arrangements were introduced in the past three years
Restructuring measures	48	55	1/0 dummy: 1 if restructuring measures were introduced in the past three years. In 2013 the variable is defined as changes in the ‘use of technology’
Changes in recruitment policies	23	27	1/0 dummy: 1 if changes in recruitment policies
Single establishment	67	53	1/0 dummy: 1 if single independent company or organization
Private sector	91	85	1/0 dummy: 1 if establishment belongs to the private sector
Sector:			
Industry	33	37	Industry

Construction	7	9	Construction
Commerce and hospitality	25	15	Commerce and hospitality
Transport and communication	8	9	Transport and communication
Financial services and real estate	5	10	Financial services and real estate
Other services	21	20	Other services
Establishment size:			
10 to 49 employees	51	23	
50 to 249 employees	32	52	
More than 250 employees	17	25	
Workforce composition:			
Workers with an OEC	84	85	Percentage of employees who have an open-ended contract (OEC)
Female workers	39	37	Percentage of employees who are female
Workers with a university degree	26	25	Percentage of employees who have a university degree
Part-time workers	14	14	Percentage of employees who work part-time (i.e. less than the usual full-time arrangement)
Training:			
On- and off-the-job training	36	44	Percentage of employees who in the past 12 months received paid time-off from their normal duties to undertake training, either off or on the job.
Performance-based pay:			
HVPBRES	41	43	1/0 dummy: 1 if payment by results, for example piece rates, provisions, brokerages or commissions
HVPINPER	51	58	1/0 dummy: 1 if variable extra pay linked to the individual performance following management appraisal
HVPGRPE	33	39	1/0 dummy: 1 if extra pay linked to the performance of the team, working group or department
HVPPRSH	38	48	1/0 dummy: 1 if variable extra pay linked to the results of the company or establishment (profit sharing scheme)
HVPSHOW	8	10	1/0 dummy: 1 if variable extra pay in form of share ownership scheme offered by the company
Country-level synthetic indicators:			
Union decentralization	3.5	2.4	0-7 scale: 0 is the lowest level of union decentralization. This is the Jansen (2014) scale. The raw variable (unauthority) can be downloaded from the ICTWSS database (Visser, 2013).
Bargaining centralization	2.3	2.8	0-5 scale: 0 is the lowest level of centralization.
Bargaining system: (Country- and establishment-based classification)			
BB_0	37	19	1/0 dummy: 1 if individual bargaining
BB_1	18	22	1/0 dummy: 1 if company bargaining (single-level)
BB_2	10	17	1/0 dummy: 1 if coordinated sector bargaining (single-level)
BB_3	5	3	1/0 dummy: 1 if uncoordinated sector bargaining (single-level)
BB_4	9	9	1/0 dummy: 1 if national bargaining (single-level)
BB_5	3	5	1/0 dummy: 1 if governed company and sector bargaining (two-level)
BB_6	4	5	1/0 dummy: 1 if ungoverned company and sector bargaining (two-level)
BB_7	1	1	1/0 dummy: 1 if governed company and national bargaining (two-level)

BB_8	3	4	1/0 dummy: 1 if ungoverned company and national bargaining (two-level)
BB_9	2	5	1/0 dummy: 1 if governed sector and national bargaining (two-level)
BB_10	3	2	1/0 dummy: 1 if ungoverned sector and national bargaining (two-level)
BB_11	2	4	1/0 dummy: 1 if governed company, sector and national bargaining (three-level)
BB_12	3	4	1/0 dummy: 1 if ungoverned company, sector and national bargaining (three-level)

Note: Means are given in percentage points.

Appendix Table 2: Workplace Representation, Establishment-Level Bargaining, National Bargaining Systems, and Subjective Assessment of Industrial Relations, Reduced Management Survey Sample, 2013 ECS

Outcome indicator	**A: Industrial relations climate (1 if good or very good)**				**B: High level of sickness/absenteeism**			
Variables	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Worker representation (Reference=prevalent union):								
Prevalent works council	0.276***	0.266***	0.261***	0.271***	-0.170**	-0.177**	-0.204**	-0.176**
Collective agreement type (Reference=no collective agreement):								
Company level	0.049	0.045	0.052		0.003	-0.0003	0.032	
Higher than company level	0.157*	0.145	0.176*		-0.011	-0.021	-0.021	
Mixed	0.164*	0.156*	0.186*		0.016	0.009	0.018	
Country-level synthetic indicators:								
Union decentralization		-0.060				-0.064		
Bargaining centralization			-0.035				0.139	
Bargaining system (Reference=individual bargaining):								
BB_1				0.022				0.014
BB_2				0.116				-0.016
BB_3				-0.020				0.116
BB_4				0.144				-0.050
BB_5				0.089				0.024
BB_6				0.093				0.028
BB_7				0.154				-0.137
BB_8				-0.269*				0.273*
BB_9				0.206				-0.094
BB_10				0.064				-0.198
BB_11				0.537**				-0.281
BB_12				0.409***				-0.228
Number of observations	9,573	9,573	8,972	9,660	9,554	9,554	8,954	8,954

Appendix Table 2: (cont.)

Outcome indicator	**C: Difficulties in retaining staff**				**D: Low motivation of employees**			
Variables	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Worker representation (Reference=prevalent union):								
Prevalent works council	-0.034	0.008	0.017	-0.024	-0.322***	-0.282***	-0.261***	-0.311***
Collective agreement type (Reference=no collective agreement):								
Company level	-0.040	-0.035	-0.069		0.019	0.028	0.020	
Higher than company level	0.107	0.135	0.174		0.027	0.062	0.063	
Mixed	-0.146	-0.131	-0.063		-0.027	-0.008	-0.006	
Country-level synthetic indicators:								
Union decentralization		0.204***				0.155***		
Bargaining centralization			-0.255***				-0.106	
Bargaining system (Reference=individual bargaining):								
BB_1				-0.052				0.041
BB_2				0.085				-0.093
BB_3				0.335*				0.135
BB_4				0.093				0.006
BB_5				-0.065				-0.193
BB_6				0.041				0.003
BB_7				-1.291*				-0.116
BB_8				0.002				0.146
BB_9				-0.227				-0.109
BB_10				0.371				0.211
BB_11				-0.344				-0.430*
BB_12				-0.311				-0.099
Number of observations	9,548	9,548	8,950	9,635	9,456	9,456	8,873	9,541

Note: See notes to Table 1.