

Owner-Managers and the Failure of Newly Adopted Works Councils

Abstract: Using representative data from the IAB Establishment Panel, we show that the managerial environment has a strong influence on the introduction and survival of works councils. Employees in owner-managed establishments are less likely to introduce a works council. Moreover, in case of an introduction, the new works council is less likely to survive if the establishment is owner-managed. The pattern of results even holds in situations that typically involve positive economic effects of works councils. This suggests that owner-managers oppose works councils not primarily for economic reasons. Our findings are rather consistent with the hypothesis that owner-managers oppose codetermination because it reduces the utility they gain from being the ultimate bosses within the establishment.

JEL Classification: J50, J53, J54, M54.

Keywords: Works council introduction; works council dissolution; liability of newness; employer resistance to change; separation of ownership and control.

1. Introduction

Works councils provide a highly developed mechanism for establishment-level codetermination (Freeman and Lazear 1995, Smith 1991, 2006). Recent econometric studies on works councils in Germany suggest that they have the potential to increase both worker utility and economic performance. These studies typically obtain neutral to positive effects on job satisfaction, employee retention, family friendly practices, training, flexible working time arrangements, capital utilization, performance pay, innovation, investment, and productivity.¹ Yet, despite these favorable outcomes, the overwhelming majority of eligible establishments do not have a works council. Ellguth and Kohaut (2009) estimate that councils are present in only 10 percent of eligible establishments.² This gives rise to the question as to what factors contribute to the low incidence of works councils.

Using representative data from the IAB Establishment Panel, our study examines the role of owner-managers in the introduction of works councils and in the dissolution of newly adopted works councils. A plain reading of the Works Constitution Act (WCA), the law that governs the works council systems, may suggest that the managerial environment should have no influence on the adoption or dissolution of a works council. Our study demonstrates that the managerial environment *de facto* has an important influence. We find that establishments with owner-managers have a lower probability that employees introduce a works council. Moreover, we show that, in case of an introduction, the new works council is less likely to survive if the establishment is run by an owner-manager. These results also hold true in exploratory instrumental variable estimates accounting for the possible endogeneity of the presence of owner-managers.

We examine two alternative explanations for our findings. On the one hand, owner-managers are managers who are the residual claimants of the establishment. Thus, they may have a stronger incentive than hired managers to oppose works councils when there are concerns that codetermination harms profitability. On the other hand, owner-managers may oppose works councils because codetermination reduces the utility they gain from being the ultimate bosses within the establishment.

Considering the performance-enhancing works council effects found in recent studies, it may not seem likely that owner-managers oppose codetermination for profit reasons. However, the positive effects only hold on average. Recent research has also shown that works council effects depend on circumstances and type establishment. Thus, our findings may reflect the resistance of owner-managers in situations entailing negative works council effects on profitability. To examine this hypothesis, we perform separate estimates for different types of establishments: establishments with and without collective bargaining coverage, establishments in the manufacturing and in the service sector, establishments in East and in West Germany, establishments with positive and with negative employment growth, and finally establishments of different size classes. Previous studies have found that the economic effects of works councils differ between these types of establishments. If owner-managers oppose codetermination for profit reasons, they should have a negative influence on works council adoption and survival only in situations that entail unfavorable effects of codetermination. Our results do not support this prediction. We find a negative influence of owner-managers even in situations that lead to positive economic effects of codetermination. This indicates that our key results cannot be explained by economic reasons. Owner-managers may oppose

codetermination rather because it limits their discretionary power and reduces their utility from being the ultimate bosses within their establishments.

Our findings give rise to the question as to what steps owner-managers take to avoid works councils. Alternative employee involvement practices are often viewed as substitutes for works councils. Against this background, we examine if the negative influence of owner-managers on works council adoption and survival can be explained by the use of alternative forms of worker representation voluntarily implemented by the employer. Our estimates do not support the substitution hypothesis. The key pattern of results holds true even when controlling for alternative forms of worker representation. This suggests that owner-managers take other steps to avoid works councils. One possibility is that owner-managers exert informal pressure on workers who show interest in a works council.

Previous econometric studies have examined the determinants of works council incidence and the determinants of changes in works council status (e.g., Addison et al. 1997, Addison et al. 2013, Jirjahn 2003, Jirjahn 2009, Mohrenweiser et al. 2012; Oberfichtner 2013). Our study is the first to investigate the survival or failure of newly adopted works councils. An average failure rate of almost 40 percent indicates that newly adopted works councils suffer severely from liability of newness. Our estimates suggest that owner-managers substantially contribute to this liability of newness. Studies by Jirjahn (2010) and Schloemer-Laufen (2012) have found a negative link between the presence of owner-managers and the incidence of a works council. Our analysis provides in-depth insights into the dynamics behind that link. Moreover, we take into account the possible endogeneity of owner-managers and examine the reasons as to why they oppose

codetermination.

On a broader scale, our study also contributes to the literature on employee involvement and organizational change in two ways. First, some studies have examined the failure of employer-initiated employee involvement programs (Chi et al. 2011, Drago 1988, Eaton 1994). By contrast, as the introduction of a works council depends on the initiative of the workforce, our study investigates the failure of employee-initiated codetermination. Second, the literature on organizational change typically focuses on employee resistance to change (Ichniowski and Shaw 1995, Zwick 2002). Our study considers employer resistance to change.

The rest of the paper is organized as follows. The institutional framework is described in Section 2. Section 3 provides the background discussion. Section 4 describes the data and the variables. Section 5 presents the empirical results, while Section 6 concludes.

2. Institutional Framework

Industrial relations in Germany are characterized by a dual structure of employee representation with both works councils and unions. Collective bargaining agreements are usually negotiated between unions and employers' associations on a broad industrial level. They regulate wage rates and general aspects of the employment contract. Typically, establishments are covered by a collective bargaining agreement if they are members of an employers' association. The share of establishments covered by firm-level agreements is very small.

Works councils provide a highly developed mechanism for establishment-level participation (Keller 2004, Mueller-Jentsch 1995). Their rights are defined in the WCA,

which was introduced in 1952 and amended in 1972, 1989, and 2001. Works councils negotiate over a bundle of interrelated company policies. On some issues, they have the right to information and consultation, in others a veto power over management initiatives, in still others the right to coequal participation in the design and implementation of policy. Their rights are strongest in social and personnel matters such as the introduction of new payment methods, the allocation of working hours and the introduction of technical devices designed to monitor employee performance.

Works councils are institutionalized bodies of worker representation that have functions that are distinct from those of unions. They are designed to increase joint establishment surplus rather than to redistribute the surplus. Works council and employer are obliged by law to cooperate “in a spirit of mutual trust . . . for the good of the employees and of the establishment.” They shall collaborate with the serious attempt to reach an agreement and to set aside differences. Works council and employer are not allowed to engage in activities which interfere with the peace within the establishment. Specifically, the works council does not have the right to strike and the employer must not obstruct the activities of the works council. The WCA explicitly states that members of the works council must not be discriminated against or favored because of their activities.

Works councils are mandatory but not automatic. They shall be elected by the whole workforce of establishments with five or more employees. However, their creation depends on the initiative of the establishment’s workforce. To introduce the works council, a meeting of the workforce has to be initiated by at least three employees or by a union that has at least one member in the establishment. At this works meeting, the

electoral board is determined by a majority vote of those who are present. If the works meeting fails to elect the electoral board or the meeting has been called for but not held, the labor court appoints a board upon petition. After being established, the electoral board calls the election, implements it and announces the results. Importantly, the WCA states that the employer must not obstruct the election of a works council. Any attempt of the employer to influence the election by threats or promises is unlawful. The cost of the election as well as the cost of operating a works council is borne by the employer.

The members of the works council have a regular term of office of four years. If workers forego the opportunity of reelecting incumbent council members or electing new members after that period, the works council is dissolved within the establishment. Moreover, and most importantly in our context, a works council can be dissolved at any time if the members of the council decide to resign from office and there are no new members replacing them.

3. Background Discussion

3.1 Works Councils and the Managerial Environment

A reading of the WCA might suggest that the employer has no or little influence on the introduction or dissolution of a works council. However, case studies (Frege 2002) and a handful of recent econometric examinations (Backes-Gellner et al. 2013, Dilger 2002, Jirjahn 2003a, Jirjahn and Smith 2006, Jirjahn et al. 2011, Pfeifer 2011a, 2014) show that the functioning of codetermination crucially depends on the managerial environment. In some establishments, works council and management are indeed able to build cooperative and trustful employer-employee relationships. Managers with a positive attitude toward employee involvement encourage the works council to participate in a wide range of

decisions. Yet, in other establishments, works council and management have extremely adversarial relationships. Management rather tries to weaken, isolate or ignore the works council.

Industrial relations in establishments without works councils are also heterogeneous and appear to be influenced by managers' attitudes and strategies (Jirjahn and Smith 2006). In some establishments, management builds cooperative and trustful employer-employee relations even without a works council. Management implements alternative modes of communication and participation so that workers do not consider a works council as necessary to speak for them. Thus, alternative forms of employee involvement substitute for works councils in these establishments.³

Yet, in other establishments, managers with a negative attitude toward employee involvement suppress works councils by exerting informal pressure on any worker who shows interest in a council.⁴ This is documented by a series of lawsuits and case studies (Bormann 2007, Koehnen 2006, Polzer and Helm 2000, Rheinisches Journalistenbuero 1987, Rudolph and Wassermann 1996). Royle (1998) provides a typology of suppression strategies. These strategies include, among others, wrongful dismissals, harassment and threatening behavior, loading off additional work to potential works councilors, and the delay and disruption of the election procedure. Survey evidence conducted by Wilkesmann et al. (2009) suggests that fear of employer reprisal is one reason as to why workers forego the election of a works council.

While previous studies have shown that management plays an important role in the functioning of works councils, little research has been undertaken to analyze the specific characteristics of the managerial environment that influence this functioning of

codetermination. As Frege (2002: p. 240) puts it in her review of the case study literature:

‘...we know little about the determinants of different workplace relations and of works councils’ work. For example, how exactly are attitudes, perceptions and behavior of works councilors and of management influenced by their demographic characteristics, social relations of the workplace and by external factors (industry, size, economic performance, etc.)?’

This lack of knowledge also applies to the role of owner-managers. Research on the relationship between owner-managers and works councils remains in its infancy. Behrens and Dribbusch (2014) provide some descriptive statistics indicating that owner-managers more often engage in suppression strategies than hired managers. An econometric study by Jirjahn et al. (2011) finds that works councils in owner-managed firms have less influence on decisions.⁵ Finally, there is some evidence that works councils are less likely to be present in owner-managed firms (Jirjahn 2010, Schloemer-Laufen 2012). These findings raise the question of the dynamics and the reasons that drive the negative link between owner-managers and works councils.

3.2 The Role of Owner-Managers

From a theoretical point of view, owner-managers may exert an influence on the introduction, the operation, and the dissolution of a works council for two different motives. First, as suggested by theoretical analyses (Feinberg 1980, Olson 1977, Singell and Thornton 1997) and empirical findings (Benz and Frey 2004, Fuchs-Schuendeln 2009, Roosenboom and Schramade 2006), owner-managers gain utility from being the ultimate bosses within the firm. Being an owner-manager allows consuming

nonpecuniary goods that can only be obtained from within the firm. Owner-managers not only receive utility from being independent at the workplace but also from “consuming” dominance over their managers and employees (Demsetz 1983). Thus, to the extent codetermination limits their discretionary power, owner-managers have a high interest in avoiding a works council.⁶ This suggests that works councils should be less likely to be adopted in establishments with owner-managers. Moreover, even if the workforce is able to overcome the resistance of an owner-manager and elects a works council, the new council should be less likely to survive. Newly adopted works councils appear to be rather weak and inexperienced (Jirjahn et al. 2011) so that owner-managers who continue to oppose codetermination can succeed in making workers dissolve the council. In this sense, owner-managers may contribute to the liability of newness of works councils within establishments.

Second, owners are the residual claimants of the firm and, thus, have a specific interest in its profitability. Since Berle and Means (1932), it has been widely recognized that the extent to which the profitability of the firm is taken into account depends on agency problems between owners and hired managers. If the firm is run by hired managers, it can be difficult for the owners to monitor the managers’ actions. As a consequence, hired managers have scope to enjoy a quiet life and forego opportunities to increase profit (Bertrand and Mullainathan 2003, Heywood 1991). By contrast, if the owners themselves run the firm, they have better access to the information flow within the firm and have greater control over decision making. This enables the owners to bring the firm’s policy into line with the profit motive. Hence, it depends on the potential profitability effect of codetermination whether owner-managers oppose or support the

implementation of a works council. If codetermination has a positive profitability effect, the profit motive implies that owner-managers should have a positive influence on the adoption and survival of works councils. Yet, if codetermination has a negative profitability effect, we should observe that works councils are less likely to be adopted and to survive in firms with owner-managers.

From a theoretical viewpoint, the profitability effect of works councils is ambiguous (Freeman and Lazear 1995). On the one hand, works councils can contribute to increased firm performance by helping build cooperation and trust between employer and employees. On the other hand, works councils may use their codetermination rights for redistribution activities in favor of the workers. Recent econometric studies suggest that the first aspect dominates. They find that the presence of a works council is positively associated with profitability (Huebler 2003, Mohrenweiser and Zwick 2009, Mueller 2011, Zwick 2007).⁷ This may suggest that owner-managers should support codetermination if the profit motive is their dominating motive.

However, recent research also shows that the economic effects of works councils are heterogeneous. They depend on circumstances and type of firm. The heterogeneity in the effects of works councils enables us to get further insights into the role of owner-managers. We can examine the influence of owner-managers on works council adoption and dissolution separately for circumstances leading to positive works council effects and circumstances leading to less favorable works council effects. If the profit motive is the dominating motive, owner-managers should oppose works councils in situations with less favorable effects and should support them in situations with positive effects. Yet, if owner-managers are primarily interested in maintaining power for its own sake, they

should oppose works councils even in situations that involve positive economic consequences of codetermination.

3.3 Moderating Factors

When examining the role of owner-managers in different situations, our primary focus is on whether or not a firm is covered by collective bargaining. Collective bargaining coverage is not only the moderating influence that has received most interest in the works council literature. It is also the moderating influence that has provided a relatively clear pattern of results (Jirjahn 2014). Building on Freeman and Lazear (1995), Huebler and Jirjahn (2003) argue that collective bargaining coverage reduces distributional conflicts within establishments, allowing works councils to play a more productive role and engage in less rent-seeking. Their empirical results provide supporting evidence. Works councils exert a positive effect on productivity in establishments covered by collective bargaining agreements but not in uncovered establishments. The positive interaction effect of works councils and collective bargaining coverage on productivity is confirmed by several other studies (Braendle 2013, Jirjahn 2003b, Jirjahn and Mueller 2014, Renaud 2008, Wagner 2008, Wagner et al. 2006).⁸ There is even evidence that collective bargaining coverage fosters a positive effect of works councils on profitability (Huebler 2003, Mueller 2011).

This has an immediate implication for our study. If the profit motive is the dominating motive, we should find no negative influence of owner-managers on works council introduction and survival in covered firms. Quite the contrary, we should find that owner-managers should support works councils in these firms. Yet, if being the ultimate boss within the firm is the dominating motive, our estimates should reveal a negative

influence of owner-managers even in covered establishments.

Some studies have examined a series of further factors that may moderate the economic effects of works councils. Specifically, firm size (Addison et al. 2001, Jirjahn 2003a, 2003b), industry and region (Frick and Moeller 2003, Wagner et al. 2006), and the economic situation (Jirjahn 2011) have received some attention. However, the evidence on the moderating role of these factors appears to be mixed. It is not clear whether the effects of works councils are stronger in smaller or in larger firms. Similarly, separate estimates for the manufacturing and the service sector, and for East and West Germany have provided no clear pattern of results. As a check of robustness, we will nonetheless examine if the influence of owner-managers on works council adoption and dissolution varies across size classes, industries or regions.

3.4 Alternative Forms of Worker Representation

Our theoretical considerations suggest that owner-managers may at least partially or even completely oppose works councils. This gives rise to the question as to what steps owner-managers can take to avoid works councils. As discussed above, there are two possible channels. On the one hand, owner-managers may exert informal pressure to suppress works councils. On the other hand, they may use alternative forms of worker representation. These forms are voluntarily implemented by the employer and not mandated by law. Examples include staff spokesmen, round tables or worker committees (Stettes 2008). While these alternative forms of worker representation have no legally defined rights and are far less powerful than works councils, they may provide channels for improved communication and information sharing between management and employees. Thus, they might take on a role similar to works councils (Addison et al.

2000).

In our empirical examination, we test whether or not a possible influence of owner-managers on works council adoption and dissolution can be explained by the use of alternative forms of worker representation. The use of alternative forms of worker representation can be seen as a potentially mediating variable. We follow the usual method of examining mediation (Baron and Kenny 1986, Judd and Kenny 1981) and estimate the determinants of works council introduction and dissolution with and without controlling for alternative forms of worker representation. If owner-managers use alternative forms of worker representation to avoid works councils, the coefficient on the variable for owner-managers should diminish or become even insignificant when controlling for those forms. Yet, if owner-managers primarily take other steps such as suppression strategies to avoid works councils, the coefficient should remain largely unchanged when controlling for alternative forms of worker representation.

4. Data and Variables

4.1 Data Set

We draw data from the IAB Establishment Panel of the Institute for Employment Research (Fischer et al. 2009). The IAB Establishment Panel is a representative sample of establishments (with at least one employee covered by social insurance) from all sectors in the German economy. The IAB is the research institute of the German Federal Employment Agency. The institute contracts with Infratest Sozialforschung, a professional survey and opinion research institute, to conduct the interviews. The data are collected on the basis of a questionnaire and follow-up personal interviews with the owner or top manager of the establishment.⁹ Each year since 1993 (1996), the IAB

Establishment Panel has surveyed several thousand establishments in Western (Eastern) Germany. Basic information on the establishment and a core set of questions are asked annually. Additional topics are introduced in specific waves.

Information on owner-managers is available since 2007. Thus, we use waves 2007 to 2012. For our analysis, we exclude agricultural, non-profit and public-sector establishments. Furthermore, in order to reduce potential problems of measurement error we focus on establishments that have at most two changes in their works council status.¹⁰ Finally, as the WCA only applies to establishments with at least five employees, the analysis is restricted to establishments that meet this minimum size.

4.2 Dependent Variables

The definitions of the variables and their descriptive statistics are provided in Table 1. Our first dependent variable is a dummy variable for the introduction of a works council. This variable is equal to one in the actual period if the establishment has no works council in the previous year and has a works council in actual year. The variable is equal to zero if the establishment has no works council both in the previous and in the actual period.

Our second dependent variable is restricted to those establishments in which a works council is introduced. It is a dummy variable for the dissolution of a newly adopted works council. This variable is equal to one if a newly adopted works council is dissolved in the years afterwards. It is equal to zero if the newly adopted works council survives in the period under consideration.

The share of establishments that introduce a works council is small. It is less than 1 percent. By contrast, the share of establishments with a failure of a newly adopted

works council is quite substantial. It amounts to nearly 38 percent. Thus, the introduction of a works council occurs only with a low probability whereas there is a high probability that the works council is dissolved within a few years after its introduction.

Note that our definition of the dependent variables requires that we observe establishments with newly adopted works council for at least three years: at least one year in which the establishment initially has no council, one year with the presence of a newly adopted works council, and at least a third year in order to observe whether or not the newly adopted works council is dissolved. We obtain a comparable reference group of establishments without works councils by generally focusing on establishments with at least three consecutive, valid observations.

In the initial year 2007, we consider only establishments without a works council. Hence, our definition of the dependent variables implies that we observe the introduction of works councils in each year from 2008 to 2011. The dissolution of newly adopted works councils is observed for each year from 2009 to 2012. For the empirical analysis, we pool the data from the respective years.¹¹

4.3 Explanatory Variables

Our key explanatory variable is a dummy equal to one if the establishment is partially or completely managed by the owner of the establishment. It is equal to zero if the establishment is completely run by hired managers.¹² 86% of the observations in our sample are owner-managed. As discussed, there are two different reasons as to why owner-managers may influence both the introduction and the dissolution of a works council. On the one hand, owner-managers may gain utility from being the ultimate bosses within their establishments. This suggests that they should oppose works councils

as codetermination limits their discretionary power. Owner-managers may not only take action to avoid the introduction of a works council. They may also take action to oppose a newly adopted council in case the employees manage to overcome their resistance. On the other hand, owner-managers may have a stronger focus on profitability than hired managers. The profit motive implies that owner-managers should oppose works councils only if codetermination entails negative economic effects but not if codetermination involves positive economic effects.

The IAB Establishment Panel allows including a rich set of further explanatory variables. Importantly, it provides information on a series of circumstances that have been shown to moderate the economic effects of works councils. Specifically, we consider collective bargaining coverage, establishment size, industry affiliation, and location in East or West Germany. In our initial regressions, we include these variables as determinants of works council introduction and dissolution. In a further step, we use the variables to perform separate estimations for different types of establishments. This allows us to get further insights into the motives of owner-managers. If maintaining power for its own sake is the dominant motive, owner-managers should oppose works councils even in situations that involve positive economic effects of codetermination. Yet, if the profit motive is the dominant motive, we should not find that owner managers oppose works councils in these situations. Quite the contrary, we should find a positive influence of owner-managers on works council introduction and survival.

We also account for alternative forms of employee representation such as staff spokesmen, round tables or worker committees. If these forms substitute for works councils, owner-managers may implement them to make works councils redundant in the

eyes of the employees. We examine this possible channel of influence by running regressions with and without including the variable for alternative employee representation.

Furthermore, we take into account that workers fearing dismissal or a downgrading of jobs have a specific interest in a works council in order to protect the firm-specific rents they have created by their efforts and human capital investments (Jirjahn 2009). The employment situation is captured by the previous growth rate of employment. Furthermore, we include a dummy variable for a poor employment outlook as particularly adverse conditions in the future should increase workers' current desire for representation. Moreover, we control for a reorganization of the establishment. The reorganization of the establishment may entail a threat to jobs leading workers to introduce a works council (Mohrenweiser et al. 2012).

The desire for representation may also depend on the types of employees. Thus, variables for the share of female employees, the share of part-time employees and the share of skilled employees are included in the regressions. We also control for personnel turnover by using the churning rate. The churning rate captures the share of worker flows that is not part of growth or decline in the size of the establishment workforce.¹³

Moreover, we control for general establishment characteristics. A variable for establishment age is included. Furthermore, variables for subsidiaries and single establishments are taken into account. The reference group consists of establishments that are parent companies. Finally, we control for the year of observation.

5. Empirical Results

5.1 Basic Estimations

Table 2 provides the initial regression results. As the dependent variables are dichotomous, the probit procedure is used. Standard errors are clustered at the establishment level. In columns (1) and (3), we estimate the determinants of works council introduction and the determinants of the dissolution of a newly adopted works council without controlling for alternative forms of worker representation. In columns (2) and (4), we include the variable for alternative forms of worker representation in the regressions.

Several of the control variables emerge as significant covariates of works council introduction. Works councils are less likely to be introduced in East German establishments. The finding indicates that workers in West and East Germany may differ in their taste for representation. Establishment size increases the probability of an introduction, but at a decreasing rate. Furthermore, collective bargaining coverage is positively associated with the introduction of a works council. This conforms to the notion that unions provide expertise and support to the workers in implementing works councils. Works councils are also more likely to be introduced in establishments with a poor employment outlook. The finding fits the hypothesis that threats to jobs lead employees to implement a works council in order to protect their firm-specific rents they have created by their efforts and human capital investments.¹⁴ Relatedly, the share of skilled workers is positively associated with works council introduction. Skilled workers typically accumulate a greater amount of firm-specific human capital and, hence, have an increased interest in rent protection. Furthermore, compared to headquarters, single

establishments and branch plants have a higher probability of introducing a works council.

In the regression on works council dissolution, only a few control variables take significant coefficients. A newly adopted works council is less likely to be dissolved in single establishments and branch plants. The share of female employees is also a negative determinant of works council dissolution.

Most importantly in our context, owner-managers play a significant role in both the introduction of works councils and the dissolution of newly adopted works councils. The presence of an owner-manager is a negative determinant of works council introduction. It decreases the probability that a works council is introduced by one percentage point. Taking into account that the probability of works council introduction equals 3 percent in an establishment run by a hired manager, this implies a decrease by about one third. In case that a works council is nonetheless introduced, the presence of an owner-manager is also a negative determinant of its survival. The presence of an owner-manager is associated with a 36 percentage point higher probability that a newly adopted works council is dissolved. Given that the probability of dissolution equals 25 percent in an establishment run by a hired manager, this is more than a doubling.

Turning to the role of alternative forms of worker representation, we obtain some weak evidence of a negative link between these forms and the introduction of a works council. This may indicate that alternative forms of worker representation and works councils are substitutes. However, including the variable for alternative forms of worker representation does not change our key findings. The estimates on the influence of owner-managers remain virtually the same. This does not support the view that owner-

managers use alternative forms of worker representation to make works councils redundant in the eyes of the employees. Owner-managers may take other steps to avoid works councils. The case studies and lawsuits discussed above suggest that suppression strategies may play a role. Owner-managers may exert pressure on workers who show interest in a works council.

All in all, our key findings conform to the hypothesis that owner-managers oppose codetermination. Owner-managers do not only have a negative influence on the introduction of works councils. In case that the workers nonetheless manage to introduce a council, owner-managers have also a negative influence on the survival of the newly adopted works council. While the WCA states that the employer must not obstruct the election and the activities of a works council, our results suggest that owner-managers have a substantial influence on the functioning of establishment-level codetermination.

5.2 Does the Influence of Owner-Managers Depend on the Type of Establishment?

Our findings give rise to the question as to what reasons lead owner-managers to oppose works councils. On the one hand, owner-managers may oppose works councils because codetermination reduces the utility they gain from being the ultimate bosses within their establishments. On the other hand, owner-managers are managers who are the residual claimants of the establishment. Thus, they may have a stronger incentive than hired managers to avoid works councils when there are concerns that codetermination harms profitability. Considering the performance-enhancing works council effects found in recent studies, it may not seem likely that owner-managers oppose codetermination for economic reasons. However, the effects of works councils are heterogeneous. Positive effects only hold on average. Thus, the negative influence on the introduction and

survival of works councils may reflect the resistance of owner-managers in situations entailing unfavorable works council effects on profitability.

In order to get deeper insights into the motives of owner-managers, we estimate the determinants of works council introduction and dissolution separately for situations involving positive economic effects and situations involving less favorable economic effects of codetermination. If the profit motive is the dominant motive, owner-managers should oppose works councils only in situations that entail unfavorable economic effects of codetermination. Yet, if being the ultimate boss within the establishment is the dominant motive, owner-managers should oppose works councils even in situations that lead to positive economic consequences of codetermination.

Our main focus is on the collective bargaining coverage of establishments. As discussed, a series of studies have shown that works councils have a stronger positive effect on productivity and profitability when substantial distributional conflicts are moderated by unions and employers' associations outside the establishments. Thus, if owner-managers are primarily interested in profitability, they should not oppose works councils in covered establishments. Table 3 provides the results. The determinants of works council introduction and dissolution are estimated separately for covered and uncovered establishments. The table displays the estimates on our key explanatory variable. Findings on the control variables are suppressed to save space. Our estimations show the same pattern of results for covered and uncovered establishments. The presence of owner-managers is associated with a lower probability of works council introduction and with a higher probability that a newly adopted works council is dissolved. Hence, the results do not support the view that owner-managers oppose codetermination for

economic reasons. Owner-managers appear to oppose works council even in case of collective bargaining coverage, i.e. even in a situation that has been shown to involve positive economic effects of codetermination. This suggests that being the ultimate boss within the establishment may be the motive that drives owner-managers' resistance to codetermination.

A series of further factors possibly moderating the economic effects of works councils have been discussed in the literature. Even though the results on the moderating role of those factors are not always conclusive, we provide separate estimations for different types of establishments to check the robustness of our findings: establishments in the manufacturing and in the service sector, establishments in East and in West Germany, establishments of different size classes, establishments with negative and with positive employment growth, and finally single-establishment firms versus multi-establishment firms. Appendix Table A1 shows the results. The estimates provide little evidence that the role of owner-managers depends on specific establishment characteristics. The estimates rather show the same pattern of results for different types of establishments. The presence of owner-managers is associated with a lower probability of works council introduction and with a higher probability of dissolution of a newly adopted council. This general pattern of results across a variety of different economic circumstances also suggests that the resistance of owner-managers is not primarily driven by economic reasons.¹⁵

5.3 Excluding Establishments with Dispersed Ownership

In our data there is a small proportion of observations with dispersed ownership. If ownership is dispersed, it is not clear what influence each individual owner has on

decisions. Thus, as a check of robustness, we exclude establishments with dispersed ownership from the analysis and, hence, focus on those establishments that have dominant owners. Table 4 shows that excluding establishment with dispersed ownership does not change the basic pattern of results. The presence of an owner-manager reduces the probability of the introduction of a works council and increases the probability that a newly adopted works council is dissolved.

5.4 Alternative Estimation Methods

As a further check of robustness, Table 5 provides the results of alternative estimation methods. As only less than 1 percent of the establishments introduce a works council, one may argue that works council introduction is a rare event. Thus, we additionally apply the rare events logit developed by King and Zeng (2001a, 2001b). This exercise confirms our basic finding of a negative link between owner-managers and works council introduction.

Furthermore, we recognize that instead of simply analyzing works council survival with a simple dummy variable one can provide a more differentiated analysis by considering the number of years a newly adopted works council survives. Thus, we define a new dependent variable for the years of survival: 0 = newly adopted works council observed for one year; 1 = newly adopted works council observed for two years; 2 = newly observed works council observed for three or more years. The determinants of the years of survival are estimated by using the Poisson model for count data. The results of that model show a negative association between owner-managers and the number of years newly adopted works councils survive.

5.5 The Issue of Endogeneity

We recognize the possibility that our previous results may suffer from potential endogeneity of our variable for the presence of owner-managers. There may be unobserved factors correlated with the presence of owner-managers and with the introduction or survival of a works council. These unobserved factors can result in an omitted variable bias. For example, findings by Jirjahn and Lange (2015) indicate that workers with specific personality traits such as positive reciprocal inclinations sort away from codetermined firms as they prefer more personal and informal relationships with their employer. To the extent these workers self-select in owner-managed firms, it may be not the owner-managers but rather the workers themselves who oppose codetermination. Or put differently, the presence of an owner-manager could in this case be endogenous as it reflects unobserved personality traits of the workforce that negatively influence the introduction and survival of a works council.

In order to account for the possible endogeneity of the variable for owner-managers, we use a recursive bivariate probit model (Greene 1998, Kassouf and Hoffmann 2006). Let us denote the dummy variable for works council introduction (works council dissolution) in establishment i by y_{1i} and the variable for owner-managers by y_{2i} :

$$y_{1i} = \begin{cases} 1 & \text{if } y_{1i}^* > 0, \\ 0 & \text{otherwise,} \end{cases} \quad (1)$$

$$y_{2i} = \begin{cases} 1 & \text{if } y_{2i}^* > 0, \\ 0 & \text{otherwise,} \end{cases} \quad (2)$$

where y_{1i}^* and y_{2i}^* are latent variables. These variables are given by:

$$y_{1i}^* = \delta y_{2i} + \beta_1' x_{1i} + u_{1i}, \quad (3)$$

$$y_{2i}^* = \beta_2' x_{2i} + u_{2i}, \quad (4)$$

where δ is the coefficient on the dummy for owner-managers, x_{1i} and x_{2i} are the vectors of the other explanatory variables, β_1 and β_2 the corresponding coefficient vectors, and u_{1i} and u_{2i} the error terms.

In our context, the coefficients in equation (3) are of primary interest. Assuming that u_{1i} has a standard normal distribution, the traditional univariate probit procedure estimates δ and β_1 by maximum likelihood without taking equation (4) into account. Yet, if the variable for owner-managers y_{2i} and the error term u_{1i} are correlated, the estimate of δ is biased and inconsistent. Consistent estimates can be obtained by a recursive bivariate probit. Equations (3) and (4) form a simultaneous equations model. This simultaneous model is called recursive as y_{2i} enters equation (3) while y_{1i} does not enter equation (4). Equation (4) can be considered as a reduced form equation and (3) as a structural equation. The bivariate probit assumes that the error terms u_{1i} and u_{2i} have a bivariate normal distribution with $E[u_{1i}] = E[u_{2i}] = 0$, $\text{Var}[u_{1i}] = \text{Var}[u_{2i}] = 1$, and a correlation $\text{Corr}[u_{1i}, u_{2i}] = \rho$. Equations (3) and (4) are estimated jointly by using full information maximum likelihood.

In principle, identification of the recursive bivariate probit model is ensured by its inherent nonlinearity (Wilde 2000). However, to avoid that identification relies solely on the functional form, exclusion restrictions are usually imposed to improve identification. Finding convincing exclusion restrictions is always a matter of debate so that attempts to account for endogeneity can be largely viewed as exploratory. Here we use the share of establishments with owner-managers calculated for 608 groups that comprise detailed industrial sectors in 16 federal states.¹⁶ The share of establishment with owner-managers

reflects the general propensity within a region and narrowly defined industry that owners manage their establishments.¹⁷ Hence, it should have a positive influence on the individual establishment's probability of having an owner-manager.

Table 6 provides the results on the key variables. Results on the control variables are suppressed to save space. In columns (1a) and (1b), the determinants of works council introduction are jointly estimated with the determinants of the presence of an owner-manager. The share of establishments with owner-managers in the industry is a significant determinant of the individual establishment's probability of having an owner-manager. A Wald test does not reject the hypothesis that the presence of an owner-manager is exogenous. Most importantly, the recursive bivariate probit model confirms that a works council is less likely to be introduced if an owner-manager is present.

In columns (2a) and (2b) the determinants of works council dissolution are jointly estimated with the determinants of the presence of an owner-manager. Again, the identifying variable is a significantly positive determinant in the instrument regression. The Wald test now rejects the exogeneity of the presence of an owner-manager. Most importantly, the estimation nonetheless shows that newly adopted works councils are more likely to be dissolved in establishments with owner-managers. The estimated influence of owner-managers on works council dissolution is in fact stronger than in the basic regressions of Table 2.

Altogether, even when taking the potential endogeneity of the presence of owner-managers into account, the estimates confirm the basic pattern of results. The presence of an owner-manager is a negative determinant of the introduction of a works council and a positive determinant of the dissolution of the newly introduced works council. Our

bivariate probit estimations provide no evidence that these influences are driven by an omitted variable bias.

5.6 The Issue of Measurement Error

In our sample 46 percent of the establishments with a change in their works status report that they had a works council for only one year. On the one hand, this may reflect a high dynamic with trial-and-error experimentation. On the other hand it, may indicate measurement error. In nonlinear regression models such as the probit model, measurement error in the dependent variable can result in biased estimates (Hausman et al. 1998). Thus, as a check of robustness, we exclude establishments that reported the presence of a newly adopted works council for only one single year. While an establishment may falsely report the presence of a newly adopted works council in one year, it is not likely that it falsely reports the presence of a newly adopted works council in two or more subsequent years. Table 7 provides the results of this robustness check. Even when imposing the additional restriction on the estimation sample we obtain the same pattern of results on our key explanatory variable. Establishments with owner-managers have a lower probability of works council introduction and a higher probability that a newly adopted works council is dissolved.

As emphasized in section 4.1, we have excluded establishments with more than two changes in works council status from the analysis (e.g., establishments reporting the introduction of a works council, thereafter the dissolution, and then again the introduction). Also for these establishments it may be not clear whether the reported dynamic reflects trial-and-error experimentation or measurement error. Nonetheless as a further check of robustness, we now add these establishments to our initial estimation

sample. As shown in Table 8, even this exercise confirms the basic pattern of results. Owner-managers are negatively associated with the introduction and survival of works councils. Altogether, our key results are robust to including or excluding observations which possibly might be subject to measurement error.

6. Conclusions

The WCA provides that employees alone should decide whether or not they want a works council. The employer must not obstruct the election or the activities of a council. Yet, our findings suggest that the employer de facto has a strong influence on the employees' decision. The presence of owner-managers in the establishment is associated with a lower probability of introducing a works council and a higher probability of dissolving a newly introduced council. This pattern of results persists in a series of robustness checks. It also holds in recursive bivariate probit estimations that account for the potential endogeneity of the presence of owner-managers.

The pattern of results is general across a variety of economic circumstances. It also holds in situations that involve positive profitability effects of works councils. Thus, the negative influence of owner-managers is difficult to explain by economic motives. The negative influence rather conforms to the hypothesis that owner-managers oppose codetermination because it limits their discretionary power and hence reduces their utility from being the ultimate bosses within their establishments.

The findings give rise to the question as to what steps owner-managers take to avoid works councils. One possible channel could be that owner-managers implement alternative forms of employee involvement to make works councils redundant in the eyes of the employees. Our analysis provides no evidence that the negative influence of

owner-managers on the introduction and dissolution of works councils can be explained by the use of alternative forms of employee involvement. This suggests that owner-managers take other steps to avoid works councils. Considering the evidence provided by case studies and lawsuits, it may seem likely that owner-managers use suppression strategies to oppose codetermination.

Several general conclusions can be drawn from our analysis. First, previous studies suggest that the works council status of an establishment is relatively stable in the long run. Our analysis shows that not only a low rate of works council introduction but also a high failure rate of newly introduced works councils contributes to that stability. The presence of owner-managers plays a role in both rates. It reduces the rate of introduction and increases the rate of failure.

Second, our results conform to the notion that the institutional framework of codetermination sets out general principles rather than specific rules. The framework involves substantial indeterminacy and situational ambiguity (Jackson 2005). This indeterminacy and ambiguity leaves room for strategic responses and can give rise to conflict over the implementation of the institutional rules. Thus, owner-managers with authoritarian or paternalistic attitudes (Herr-im-Haus-Mentalität) have scope for resisting works councils. This raises the question of the policy implications. Some jurists have recognized that workers' rights provided by the WCA are only incompletely enforceable (Daeubler 2001). One reason for the incomplete enforceability might be that hidden actions of employers are, in general, difficult to verify in court. However, labor courts have substantial discretion in interpreting and developing the legal framework. There is evidence that decisions of labor courts are not only driven by legal principles but also by

political attitudes and circumstances, labor market conditions and even the gender composition of the courts (Berger and Neugart 2011, 2012). Workers' chance to win a legal dispute appears to depend on where and when their cases are filed. Thus, from a policy viewpoint one may ask if the discretionary power of labor courts can be restricted in such a way that employees are more able to defend their right to codetermination against the resistance of employers.

Third, previous econometric studies have tried to understand the functioning of establishment-level codetermination by examining its economic consequences. Our findings suggest that non-economic factors may also play an important role. The maintenance of power for its own sake appears to be one motive as to why owner-managers oppose codetermination. This calls for a more detailed consideration of non-economic factors in econometric analyses. Such an extension would allow combining a systematic quantitative analysis with a more comprehensive perspective on the functioning of establishment-level codetermination.

Finally, we note that future econometric research could fruitfully examine the specific steps owner-managers take in order to discourage workers from electing and operating a works council. The IAB data do not contain information on these steps. So we must leave this topic until representative data with detailed information are available.

References

- Addison, John T., Alex Bryson, Paulino Teixeira, Andre Pahnke and Lutz Bellmann. 2013. "The Extent of Collective Bargaining and Workplace Representation: Transitions Between States and Their Determinants. A Comparative Analysis of Germany and Great Britain," *Scottish Journal of Political Economy* 60: 182 – 209.
- Addison, John T., Claus Schnabel and Joachim Wagner. 1997. "On the Determinants of Mandatory Works Councils in Germany," *Industrial Relations* 36: 419 – 445.
- Addison, John T., Claus Schnabel and Joachim Wagner. 2000. "Die mitbestimmungsfreie Zone aus ökonomischer Sicht," *Hamburger Jahrbuch für Wirtschafts- und Gesellschaftspolitik* 45: 277 – 295.
- Addison John T., Claus Schnabel and Joachim Wagner. 2001. "Works Councils in Germany: Their Effects on Firm Performance," *Oxford Economic Papers* 53: 659 – 694.
- Askildsen, Jan Erik, Uwe Jirjahn and Stephen Smith. 2006. "Works Councils and Environmental Investment: Theory and Evidence from German Panel Data," *Journal of Economic Behavior and Organization* 60: 346 – 372.
- Backes-Gellner, Uschi, Jens Mohrenweiser and Kerstin Pull. 2013. "The Effectiveness of Codetermination Laws in Cooperative and Adversarial Employment Relations: When Does Regulation Have Bite?" *Economic and Industrial Democracy*, Forthcoming.
- Backes-Gellner, Uschi and Simone N. Tuor. 2010. "Avoiding Labor Shortages by Employer Signaling – On the Importance of Good Work Climate and Labor Relations," *Industrial and Labor Relations Review* 63: 271 – 286.
- Baert, S. and E. Omev. 2014. "Hiring Discrimination against Pro-Union Applicants: The Role Union Density and Firm Size," IZA Discussion Paper No. 8516, Bonn.
- Baron, Reuben M. and David A. Kenny. 1986. "The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations," *Journal of Personality and Social Psychology* 51: 1173 – 1182.
- Behrens, Martin and Heiner Dribbusch. 2014. "Arbeitgebermaßnahmen gegen Betriebsräte: Angriffe auf die betriebliche Mitbestimmung," *WSI Mitteilungen* 02/2014: 140 – 148.
- Belfield, Clive and John S. Heywood. 2004. "Do HRM Practices Influence the Desire for Unionization? Evidence across Workers, Workplaces, and Co-Workers for Great Britain," *Journal of Labor Research* 25: 279 – 299.
- Benz, Matthias and Bruno S. Frey. 2004. "Being Independent Raises Happiness at Work," *Swedish Economic Policy Review* 11: 95 – 134.
- Berger, Helge and Michael Neugart. 2011. "Labour Courts, Nomination Bias and Unemployment in Germany," *European Journal of Political Economy* 27: 659 – 673.
- Berger, Helge and Michael Neugart. 2012. "How German Labor Courts Decide: An Econometric Case Study," *German Economic Review* 13: 56 – 70.

- Berle, A. and G. Means. 1932. *The Modern Corporation and Private Equity*. New York.
- Bertrand, M. and S. Mullainathan. 2003. "Enjoying the Quiet Life? Corporate Governance and Managerial Preferences," *Journal of Political Economy* 111: 1043 – 1075.
- Bormann, Sarah. 2007. *Angriff auf die Mitbestimmung: Unternehmensstrategien gegen Betriebsräte – der Fall Schlecker*, edition sigma: Berlin.
- Braendle, Tobias. 2013. "Flexible Collective Bargaining Agreements: Still a Moderating Effect on Works Council Behavior?" IAW Discussion Paper No. 96, Tuebingen.
- Burgess, Simon, Julia Lane and David Stevens. 2000. "Job Flows, Worker Flows and Churning," *Journal of Labor Economics* 18: 473 – 502.
- Cornelissen, Thomas, John S. Heywood and Uwe Jirjahn. 2011. "Performance Pay, Risk Attitudes and Job Satisfaction," *Labour Economics* 18: 229 – 239.
- Chi, Wei, Richard B. Freeman and Morris M. Kleiner. 2011. "Adoption and Termination of Employee Involvement Programs," *Labour* 25: 45 – 62.
- Cullinane, Niall and Tony Dundon. 2013. "Unitarism and Employer Resistance to Trade Unionism," *International Journal of Human Resource Management*, Forthcoming.
- Daeubler, Wolfgang. 2001. "Die novellierte Betriebsverfassung," *Industrielle Beziehungen – The German Journal of Industrial Relations* 8: 364 – 378.
- Demsetz, Harold. 1983. "The Structure of Ownership and the Theory of the Firm," *Journal of Law and Economics* 26: 375 – 390.
- Dilger, Alexander. 2002. *Ökonomik betrieblicher Mitbestimmung*. Rainer Hampp Verlag.
- Drago, Robert. 1988. "Quality Circle Survival: An Exploratory Analysis," *Industrial Relations* 27: 336 – 351.
- Eaton, Adrienne E. 1994. "The Survival of Employee Participation Programs in Unionized Settings," *Industrial and Labor Relations Review* 47: 371 – 389.
- Ellguth, Peter and Susanne Kohaut. 2009. "Tarifbindung und betriebliche Interessenvertretung in Ost und West: Schwund unterm sicheren Dach," IAB Forum 2/2009.
- Ellguth, Peter and Markus Promberger. 2004. "Arbeitszeitsituation und Betriebsrat – eine Matched-Pair-Analyse mit Daten des IAB-Betriebspanels," in: Lutz Bellmann and Claus Schnabel, eds., *Betriebliche Arbeitszeitpolitik im Wandel*. Nuremberg: BeitrAB: 111 – 131.
- Feinberg, Robert M. 1980. "On the Consistency of Non-Profit-Maximizing Behavior with Perfect Competition," *Southern Economic Journal* 46: 1163 – 1166.
- Fiorito, Jack. 2001. "Human Resource Management Practices and Worker Desires for Union Representation," *Journal of Labor Research* 22: 335 – 354.

- Fiorito, Jack, Christopher Lowman and Forrest D. Nelson. 1987. "The Impact of Human Resource Policies on Union Organizing," *Industrial Relations* 26: 113 – 126.
- Fischer, Gabriele, Florian Janik, Dana Mueller and Alexandra Schmucker. 2009. "The IAB Establishment Panel – Things Users Should Know," *Schmollers Jahrbuch – Journal of Applied Social Science Studies* 129: 133 – 48.
- Freeman, Richard and Edward Lazear. 1995. "An Economic Analysis of Works Councils," in *Works Councils – Consultation, Representation and Cooperation*, edited by Rogers J. and Streeck W., Chicago, University of Chicago Press: 27 – 52.
- Frege, Carola M. 2002. "A Critical Assessment of the Theoretical and Empirical Research on German Works Councils," *British Journal of Industrial Relations* 40: 221 – 248.
- Frick, Bernd and Iris Moeller. 2003. "Mandated Works Councils and Firm Performance: Labor Productivity and Personnel Turnover in German Establishments," *Schmollers Jahrbuch – Journal of Applied Social Science Studies* 123: 423 – 54.
- Fuchs-Schuendeln, Nicola. 2009. "On Preferences for Being Self-Employed," *Journal of Economic Behavior and Organization* 71: 162 – 71.
- Gall, Gregor. 2004. "British Employer Resistance to Trade Union Recognition," *Human Resource Management Journal* 14: 36 – 52.
- Godard, John. 2009. "Institutional Environments, Work and Human Resource Practices, and Unions: Canada versus England," *Industrial and Labor Relations Review* 62: 173 – 199.
- Greene, W. H. 1998. "Gender Economics Courses in Liberal Arts Colleges: Further Results," *Journal of Economic Education* 29: 291 – 300.
- Grund Christian and Andreas Schmitt. 2013. "Works Councils, Wages, and Job Satisfaction," *Applied Economics* 45: 299 – 310.
- Hausman, J.A., J. Abrevaya and F.M. Scott-Morton. 1998. "Misclassification of the Dependent Variable in a Discrete-Response Setting," *Journal of Econometrics* 87: 239 – 269.
- Heywood, John S. 1991. "Imports and Domestic Wages: Is the Relationship Consistent with Expense Preference Behavior?" *Journal of Law, Economics, & Organization* 7: 355 – 372.
- Heywood, John S. and Uwe Jirjahn. 2002. "Payment Schemes and Gender in Germany," *Industrial and Labor Relations Review* 56: 44 – 64.
- Heywood, John S. and Uwe Jirjahn. 2009. "Family Friendly Practices and Worker Representation: German Evidence," *Industrial Relations* 48: 121 – 145.
- Heywood, John S., Uwe Jirjahn and Georgi Tsertsvadze. 2010. "Hiring Older Workers and Employing Older Workers: German Evidence," *Journal of Population Economics* 23: 595 – 615.
- Huebler, Olaf. 2003. "Zum Einfluss des Betriebsrats in mittelgroßen Unternehmen auf Investitionen, Löhne, Produktivität und Renten – Empirische Befunde," in: Goldschmidt

N., ed., *Wunderbare Wirtschaftswelt – Die New Economy und ihre Herausforderungen*, Nomos, Baden-Baden: 77 – 94.

Huebler, O. and U. Jirjahn. 2003. “Works Councils and Collective Bargaining in Germany: The Impact on Productivity and Wages,” *Scottish Journal of Political Economy* 50: 1 – 21.

Ichniowski, C. and K. Shaw. 1995. “Old Dogs and New Tricks: Determinants of the Adoption of Productivity-Enhancing Work Practices,” in M. Baily, P. Reiss and C. Winston, eds., *Brookings Papers on Economic Activity*, Washington D.C.: Brookings Institution.

Jackson, Gregory. 2005. “Contested Boundaries: Ambiguity and Creativity in the Evolution of German Codetermination,” in Wolfgang Streeck and Kathleen Turner, eds., *Beyond Continuity: Institutional Change in Advanced Political Economies*, Cary, NC: Oxford University Press: 229 – 254.

Jirjahn, Uwe. 2003a. “Executive Incentives, Works Councils and Firm Performance,” *Schmollers Jahrbuch – Journal of Applied Social Science Studies* 123: 397 – 421.

Jirjahn, Uwe. 2003b. “Produktivitätswirkungen betrieblicher Mitbestimmung – Welchen Einfluss haben Betriebsgröße und Tarifbindung?” *Zeitschrift für Betriebswirtschaft* 73: 63 – 85.

Jirjahn, Uwe. 2008. “On the Determinants of Shift Work and Overtime Work: Evidence from German Establishment Data,” *British Journal of Industrial Relations* 46: 133 – 168.

Jirjahn, Uwe. 2009. “The Introduction of Works Councils in German Establishments – Rent Seeking or Rent Protection?” *British Journal of Industrial Relations* 47: 521 – 545.

Jirjahn, Uwe. 2010. “Works Councils and Employment Growth in German Establishments,” *Cambridge Journal of Economics* 34: 475 – 500.

Jirjahn, Uwe. 2011. “Non-Union Worker Representation and the Closure of Establishments: German Evidence on the Role of Moderating Factors,” *Economic and Industrial Democracy* 33: 5 – 27.

Jirjahn, Uwe. 2012. “Industrielle Beziehungen und Innovationserfolg,” in Knut Gerlach, Olaf Hübler and Stephan Thomsen, eds., *Arbeitsmarkt und Arbeitsmarktpolitik in Niedersachsen*, NIW Vortragsreihe Band 18, Hannover: 43 – 53.

Jirjahn, Uwe. 2014. “Works Councils and Collective Bargaining in Germany: A Simple but Crucial Theoretical Extension,” *Research Papers in Economics* No. 13/14, University of Trier.

Jirjahn, Uwe and Kornelius Kraft. 2011. “Do Spillovers Stimulate Incremental or Drastic Product Innovations? Evidence from German Establishment Data,” *Oxford Bulletin of Economics and Statistics* 73: 509 – 538.

Jirjahn, Uwe and Vanessa Lange. 2015. “Reciprocity and Workers’ Tastes for Representation,” *Journal of Labor Research*, Forthcoming.

Jirjahn, Uwe, Jens Mohrenweiser and Uschi Backes-Gellner. 2011. “Works Councils and Learning: On the Dynamic Dimension of Codetermination,” *Kyklos* 64: 427 – 447.

- Jirjahn, Uwe and Steffen Mueller. 2014. "Nonunion Worker Representation, Foreign Owners and Firm Performance," *Oxford Economic Papers* 66: 140 – 163.
- Jirjahn, Uwe and Stephen C. Smith. 2006. "What Factors Lead to Management to Support or Oppose Employee Participation – with and without Works Councils? Hypotheses and Evidence from Germany," *Industrial Relations* 45: 650 – 680.
- Judd, Charles M. and David A. Kenny. 1981. "Process Analysis: Estimating Mediation in Treatment Evaluations," *Evaluation Review* 5: 602 – 619.
- Kassouf A. L. and R. Hoffman. 2006. "Work-Related Injuries Involving Children and Adolescents: Application of a Recursive Bivariate Probit Model," *Brazilian Review of Econometrics* 26: 105 – 126.
- Keller, B. 2004. "Employment Relations in Germany," in eds. Bamber, G.J., R.D Lansbury and N. Wailes, *International and Comparative Employment Relations. A Study of Industrialised Market Economies, 4th ed.* Sydney-Singapore: Sage Publications, pp. 211-253.
- King, Gary and Langche Zeng. 2001a. "Logistic Regression in Rare Events Data," *Political Analysis* 9: 137 – 163.
- King, Gary and Langche Zeng. 2001b. "Explaining Rare Events in International Relations," *International Organization* 55: 693 – 715.
- Koehnen, H. 2006. "Unternehmenskultur und Personalpolitik: Zur Situation der Beschäftigten und der Interessenvertretung bei H&M," Arbeitspapier 119, Hans Böckler Stiftung.
- Lee, S. 2004. "A Re-examination of Public Sector Wage Differentials in the United States: Evidence from the NLSY with Geocode," *Industrial Relations* 43: 448 – 472.
- Logan, John. 2006. "The Union Avoidance Industry in the United States," *British Journal of Industrial Relations* 44: 651 – 675.
- Machin, S. and Wadhvani, S. 1991. "The Effects of Unions on Organizational Change and Employment," *Economic Journal* 101: 835 – 854.
- Machin, S. and S. Wood. 2005. "Human Resource Management as a Substitute for Trade Unions in British Workplaces," *Industrial and Labor Relations Review* 58: 201 – 218.
- Mohrenweiser, Jens, Paul Marginson and Uschi Backes-Gellner. 2012. "What Triggers the Establishment of a Works Council," *Economic and Industrial Democracy* 33: 295 – 316.
- Mohrenweiser, Jens and Thomas Zwick. 2009. "Why Do Firms Train Apprentices? The Net Cost Puzzle Reconsidered," *Labour Economics* 16: 631 – 637.
- Mueller, Steffen. 2011. "Works Councils and Firm Profits Revisited," *British Journal of Industrial Relation* 49: s27 – s43.
- Mueller-Jentsch, W. 1995. "Germany: From Collective Voice to Co-Management," in *Works Councils – Consultation, Representation and Cooperation in Industrial Relations*, edited by

- J. Rogers and W. Streeck, Chicago: University of Chicago Press: 53 – 78.
- Oberfichtner, Michael. 2013. “Works Council Introductions: Do They Reflect Workers’ Voice?” Discussion Paper No. 83, Chair of Labour and Regional Economics, University of Erlangen-Nuremberg.
- Olsen, E. Odgers. 1977. “Profit Maximization vs. Utility Maximization: A Correction,” *Southern Economic Journal* 43, pp. 1390 – 1393.
- Pfeifer, Christian. 2011a. “The Heterogeneous Economic Consequences of Works Councils Relations,” *Schmollers Jahrbuch – Journal of Applied Social Science Studies* 131: 59 – 71.
- Pfeifer, Christian. 2011b. “Works Councils, Union Bargaining, and Quits in German Firms,” *Economic and Industrial Democracy* 32: 243 – 260.
- Pfeifer, Christian. 2014. “Works Councils and the Management of Human Resources: Evidence from German Establishment Data,” *Economic and Industrial Democracy* 35: 143 – 163.
- Polzer, Alexandra and Ruediger Helm. 2000. “Behinderung der Betriebsratsstätigkeit: Ein Fall für den Staatsanwalt,” *Arbeitsrecht im Betrieb* 21: 133 – 139.
- Renaud, S. 2008. *Arbeitnehmermitbestimmung im Strukturwandel*. Metropolis.
- Rheinisches Journalistenbuero (Werner Balsen, Hans Nakielski, Karl Roessel and Rolf Winkel). 1987. *Unternehmermethoden gegen Betriebsratswahlen*. Reinbek.
- Roosenboom, Peter and Willem Schramade. 2006. “The Price of Power: Valuing the Controlling Position of Owner-Managers in French IPO Firms,” *Journal of Corporate Finance* 12: 270 – 295.
- Royle, Tony. 1998. “Avoidance Strategies and the German System of Codetermination,” *International Journal of Human Resource Management* 9: 1026 – 1047.
- Rudolph, Wolfgang and Wolfram Wassermann. 1996. *Betriebsräte im Wandel. Aktuelle Entwicklungsprobleme gewerkschaftlicher Betriebspolitik im Spiegel der Betriebsratswahlen*, Münster: Westfälisches Dampfboot.
- Schloemer-Laufen, Nadine. 2012. *Die Entstehung von Betriebsräten in kleinen und mittleren Familienunternehmen*, Gabler: Wiesbaden.
- Schloemer-Laufen, Nadine, Rosemarie Kay and Arndt Werner. 2012. “Zum Einfluss der Inhaberführung auf die Betriebsrat-Geschäftsführer-Beziehung – Eine theoretische und empirische Analyse in mittelständischen Unternehmen,” *Zeitschrift für Betriebswirtschaft* 82: 93 – 115.
- Schmitt, John and Ben Zipperer. 2009. “Dropping the Ax: Illegal Firings during Union Election Campaigns, 1951–2007,” *CEPR Reports and Issue Briefs* 2009-12.
- Singell, L. D. and J. Thornton. 1997. “Nepotism, Discrimination and the Persistence of Utility-Maximization, Owner-Operated Firms,” *Southern Economic Journal* 63, pp. 904 – 919.

- Smith, Stephen C. 1991. "On the Economic Rationale for Codetermination Law," *Journal of Economic Behavior and Organization* 12: 261 – 281.
- Smith, Stephen C. 2006. "Employee Participation Rights in Corporate Governance: Economic Rationale, a Test of a Leading Theory, and Some Modest Policy Proposals," in *Advances in the Economic Analysis of Participatory and Labor Managed Firms*, edited by Panu Kalmi and Mark Klinedinst, Amsterdam, Elsevier: 105 – 146.
- Stettes, Oliver. 2008. "Betriebsräte und alternative Formen der Mitbestimmung – Ergebnisse aus dem IW-Zukunftspanel," *IW-Trends* 3/2008, Institut der deutschen Wirtschaft Koeln, Germany.
- Wagner, Joachim. 2008. "German Works Councils and Productivity: First Evidence from a Nonparametric Test," *Applied Economics Letters* 15: 727 – 730.
- Wagner, J., T. Schank, C. Schnabel and J. Addison. 2006. "Works Councils, Labor Productivity and Plant Heterogeneity: First Evidence from Quantile Regressions," *Jahrbuecher fuer Nationaloekonomie und Statistik – Journal of Economics and Statistics* 226: 505 – 518.
- Wilde, J. 2000. "Identification of Multiple Probit Models with Endogenous Dummy Regressors," *Economics Letters* 69: 309 – 312.
- Wilkesmann, Uwe, Maximiliane Wilkesmann, Alfredo Virgillito and Tobias Broecker. 2009. "Erwartungen an Betriebsräte: Erste Ergebnisse der quantitativen Befragung," Discussion Paper No. 2, Zentrum für Weiterbildung, Technische Universität Dortmund.
- Woessmann, L. and M. West. 2006. "Class Size Effects in School Systems around the World: Evidence from Between-Grade Variation in TIMMS," *European Economic Review* 50: 695 – 736.
- Zwick, Thomas. 2002. "Employee Resistance against Innovations," *International Journal of Manpower* 23: 542 – 552.
- Zwick, Thomas. 2005. "Continuing Vocational Training Forms and Establishment Productivity in Germany," *German Economic Review* 6: 155 – 184.
- Zwick, Thomas. 2007. "Apprenticeship Training in Germany – Investment or Productivity Driven?" *Zeitschrift für Arbeitsmarktforschung – Journal of Labour Market Research* 40: 193 – 204.

Table 1: Variable Definitions and Descriptive Statistics

| Variable | Description (Mean, Standard Deviation) |
|--|---|
| Introduction of a works council | Dummy variable equals 1 if a works council is introduced in the establishment (.007, .085). |
| Dissolution of a newly adopted works council | Dummy variable equals 1 if a newly adopted works council is dissolved (.375, .485). |
| Owner-manager | Dummy variable equals 1 if the establishment is partially or completely managed by its owners (.860, .347). |
| Alternative forms of worker representation | Dummy variable equals 1 if the establishment has implemented alternative forms of worker representation such as staff spokesmen, round tables or worker committees (.091; .287) |
| Organizational change | Dummy variable equals 1 if the establishment reports a spin-off, outsourcing, merger, acquisition or partial plant closure (.037, .188). |
| Employment growth | Employment growth between the current year and the previous year in percent (.058, .545). |
| Size | Number of employees (40.11, 132.46). |
| Size squared | Number of employees squared. |
| Poor employment outlook | Dummy variable equals 1 if the establishment has poor or very poor employment expectations (.076, .264). |
| Collective agreement | Dummy variable equals 1 if the establishment is covered by a collective bargaining agreement (.328, .469). |
| Single establishment | Dummy variable equals 1 if the establishment has no subsidiaries and is not itself a subsidiary (.857, .348). |
| Subsidiary | Dummy variable equals 1 if the establishment is a subsidiary (.085, .279). |
| Skilled employees | The share of the establishment's workforce with a completed apprenticeship training or an university degree (.682, .257). |
| Part-time employees | The share of the establishment's workforce that is part time (.221, .241). |
| Female employees | The share of the establishment's workforce that is female (.407, .299). |
| Churning | A churning rate based on the first half of a year. H = number of hires and S = number of separations. The rate is equal to $1 - (H-S)^2/(H+S)^2$ if $H + S > 0$ and equal to 0 if $H+S = 0$ (.264, .415). |
| Founded in the last 10 years | Dummy variable equals 1 if the establishment has been founded in the last 10 years (.156, .363). |
| East Germany | Dummy variable equals 1 if the establishment is located in the former East Germany (.427, .494). |
| Share of establishments with owner-managers | Share of establishments with owner-managers calculated for 38 industrial groups in 16 federal states. |
| Industry dummies | Dummy variables for 8 broadly defined industrial sectors. |
| Year dummies | Dummy variables for the respective years. |

N = 25,018. For the variable for the dissolution of a newly adopted works council the number of observations is equal to 184.

Table 2: Basic Estimates

| | Introduction of a works council | | Dissolution of a newly adopted works council | |
|--|---------------------------------|--------------------------------|--|------------------------------|
| | (1) | (2) | (3) | (4) |
| Owner-manager | -0.592 [-0.0100] (8.41)*** | -0.594 [-0.0098] (8.46)*** | 1.047 [0.363] (3.91)*** | 1.041 [0.361] (3.88)*** |
| Alternative forms of worker representation | ----- | -0.213 [-0.0014] (1.82)* | ----- | 0.149 [0.0524] (0.43) |
| Organizational change | 0.129 [0.0013] (1.04) | 0.135 [0.0014] (1.08) | -0.601 [-0.172] (1.37) | -0.634 [-0.1798] (1.39) |
| Employment growth | -0.024 [0.0009] (0.23) | -0.031 [-0.0002] (0.28) | -0.741 [-0.253] (1.25) | -0.709 [-0.2422] (1.16) |
| Size | 0.003 [0.00001] (6.12)*** | 0.003 [0.00003] (6.23)*** | -0.001 [-0.0002] (0.51) | -0.001 [-0.0003] (0.58) |
| Size squared | -0.002 [-0.000001] (3.07)*** | -0.002 [-0.00001] (3.20)*** | 0.001 [0.00006] (0.13) | 0.001 [0.00001] (0.20) |
| Poor employment outlook | 0.266 [0.0032] (2.87)*** | 0.268 [0.0032] ((2.89)*** | -0.061 [-0.207] (0.18) | -0.059 [-0.0202] (0.18) |
| Collective agreement | 0.282 [0.0029] (4.19)*** | 0.290 [0.0029] (4.31)*** | 0.375 [0.127] (1.59) | 0.370 [0.1255] (1.56) |
| Single establishment | 0.246 [0.0017] (1.93)* | 0.254 [0.0017] (1.99)** | -1.266 [-0.428] (2.53)** | -1.283 [-0.4336] (2.55)** |
| Subsidiary | 0.621 [0.0017] (4.58)*** | 0.632 [0.0119] (4.65)*** | -0.899 [0.281] (1.77)* | -0.927 [-0.2897] (1.82)* |
| Skilled employees | 0.539 [0.0047] (3.64)*** | 0.558 [0.0048] (3.71)*** | 0.096 [0.032] (0.23) | 0.079 [0.0272] (0.19) |
| Part-time employees | -0.071 [-0.0006] (0.43) | -0.072 [-0.0006] (0.44) | 0.861 [0.2994] (1.43) | 0.874 [0.2993] (1.44) |
| Female employees | 0.061 [0.0005] (0.44) | 0.072 [0.0006] (0.53) | -1.331 [0.455] (2.39)** | -1.367 [-0.4681] (2.47)** |
| Churning | 0.079 [0.0007] (1.04) | 0.077 [0.0006] (1.01) | -0.086 [-0.030] (0.33) | -0.074 [-0.0252] (0.27) |
| Founded in the last 10 years | 0.082 [0.0008] (0.97) | 0.082 [0.0007] (0.97) | 0.121 [0.042] (0.39) | 0.109 [0.0380] (0.35) |
| East Germany | -0.254 [-0.0022] (3.52)*** | -0.271 [-0.0023] (3.71)*** | 0.024 [0.008] (0.09) | 0.042 [0.0144] (0.17) |
| Constant | -3.131 (11.23)*** | -3.145 (11.26)*** | -4.953 (6.05)*** | -4.909 (4.96)*** |
| Industry dummies | Included | Included | Included | Included |
| Year dummies | Included | Included | Included | Included |
| N | 25,018 | 25,018 | 184 | 184 |
| Pseudo R ² | 0.182 | 0.184 | 0.221 | 0.221 |

Method: Probit. The table shows the estimated coefficients. Marginal effects are in square brackets and z-statistics are in parentheses. Standard errors are clustered at the establishment level. *** Statistically significant at the 1% level; ** at the 5% level; * at the 10% level.

Table 3: Separate Estimates by Collective Bargaining Status

| | Uncovered establishments | | Covered establishments | |
|-----------------------|---------------------------------|--|---------------------------------|--|
| | Introduction of a works council | Dissolution of a newly adopted works council | Introduction of a works council | Dissolution of a newly adopted works council |
| Owner-manager | -0.513 [-.0045] (5.27)*** | 1.433 [.3948] (3.23)*** | -0.719 [-.0197] (6.62)*** | 1.765 [.6098] (3.86)*** |
| N | 16,803 | 88 | 8,215 | 96 |
| Pseudo R ² | 0.19 | 0.42 | 0.19 | 0.29 |

Method: Probit. The table shows the estimated coefficients on the dummy variable for owner-managers. Results on the control variables are suppressed to save space. Marginal effects are in square brackets and z-statistics are in parentheses. Standard errors are clustered at the establishment level. *** Statistically significant at the 1% level.

Table 4: Estimations without establishments that have dispersed ownership

| | Introduction of a works council | Dissolution of a newly adopted works council |
|-----------------------|---------------------------------|--|
| Owner-manager | -0.603 [-.0101] (8.42)*** | 1.069 [.3758] (3.94)*** |
| N | 24,207 | 177 |
| Pseudo R ² | 0.19 | 0.23 |

Method: Probit. The table shows the estimated coefficients on the dummy variable for owner-managers. Results on the control variables are suppressed to save space. Marginal effects are in square brackets and z-statistics are in parentheses. Standard errors are clustered at the establishment level. *** Statistically significant at the 1% level.

Table 5: Alternative estimation methods

| | Introduction of a works council Method: Rare events logit | Years of survival of a newly adopted works council Method: Poisson model |
|---------------|--|---|
| Owner-manager | -1.574 [0.021] (8.92)*** | -0.294 [-0.6146] (4.34)*** |
| N | 25,018 | 184 |

Method: Rare events logit. The table shows the estimated coefficients on the dummy variable for owner-managers. Results on the control variables are suppressed to save space. Marginal effects are in square brackets and z-statistics are in parentheses. Standard errors are clustered at the establishment level. *** Statistically significant at the 1% level.

Table 6: The Issue of Endogeneity

| | (1a) Introduction of a works council | (1b) Owner-manager | (2a) Dissolution of a newly adopted works council | (2b) Owner-manager |
|--|--|-----------------------------|---|----------------------------|
| Share of establishments with owner-managers | ----- | 1.233 [0.073] (12.12)*** | ----- | 1.970 [0.312] (5.70)*** |
| Owner-manager | -0.575 [-0.056] (1.68)* | ----- | 2.897 [0.397] (4.24)*** | ----- |
| N | 25,018 | | 184 | |
| Rho | -0.010 | | -0.732 | |
| χ^2 (Wald test of exogeneity) | 0.003 | | 2.84** | |

Method: Recursive bivariate probit. The table shows the estimated coefficients on the dummy variable for owner-managers and on the variable for the share of establishments with owner-managers. Results on the control variables are suppressed to save space. Marginal effects are in square brackets and z-statistics are in parentheses. Standard errors are clustered at the establishment level. Rho is the correlation between the error terms in equations (2) and (3). *** Statistically significant at the 1% level; ** at the 5% level; * at the 10% level.

Table 7: Estimations without establishments that have introduced a works council for only one year

| | Introduction of a works council | Dissolution of a newly adopted works council |
|-----------------------|---------------------------------|--|
| Owner-manager | -0.753 [-0.0065] (7.35)*** | 3.244 [0.183] (3.00)*** |
| N | 19,310 | 86 |
| Pseudo R ² | 0.246 | 0.511 |

Method: Probit. The table shows the estimated coefficients on the dummy variable for owner-managers. Results on the control variables are suppressed to save space. Marginal effects are in square brackets and z-statistics are in parentheses. Standard errors are clustered at the establishment level. *** Statistically significant at the 1% level.

Table 8: Estimations additionally including establishments with more than two changes in works council status

| | Introduction of a works council | Dissolution of a newly adopted works council |
|-----------------------|---------------------------------|--|
| Owner-manager | -0.633 [-0.015] (9.67)*** | 0.536 [0.204] (3.09)*** |
| N | 25,130 | 296 |
| Pseudo R ² | 0.212 | 0.10 |

Sample additionally includes establishments that change the works council status frequently and are counted as newly introduces works council at least twice. Method: Probit. The table shows the estimated coefficients on the dummy variable for owner-managers. Results on the control variables are suppressed to save space. Marginal effects are in square brackets and z-statistics are in parentheses. Standard errors are clustered at the establishment level. *** Statistically significant at the 1% level.

Appendix

Table A1: Additional Separate Estimates

| | Introduction of a works council | Dissolution of a newly adopted works council |
|---|--|--|
| Separate estimations by location | | |
| Only establishments located in East Germany | -0.583 [-0.0049] (4.70)*** | 3.825 [0.7493]~ (4.75)*** |
| | N = 10,685; Pseudo R ² = 0.19 | N = 55, Pseudo R ² = 0.62 |
| Only establishments located in West Germany | -0.598 [-0.0121] (6.70)*** | 0.917 [0.3202] (2.90)*** |
| | N = 14,333; Pseudo R ² = 0.19 | N = 129, Pseudo R ² = 0.41 |
| Separate estimations by industry | | |
| Only establishments in the manufacturing sector | -0.422 [-0.0050] (3.25)*** | 2.373 [0.4550] (2.36)** |
| | N = 7,398; Pseudo R ² = 0.17 | N = 52, Pseudo R ² = 0.55 |
| Only establishments in the service sector | -0.661 [-0.0117] (7.07)*** | 1.179 [0.4381] (3.73)*** |
| | N = 14,165; Pseudo R ² = 0.21 | N = 121, Pseudo R ² = 0.24 |
| Separate estimations for single-establishment firms and multi-establishment firms | | |
| Only single-establishment firms | -0.658 [-0.0100] (7.85)*** | 0.716 [0.2053] (2.04)*** |
| | N = 21,459; Pseudo R ² = 0.16 | N = 103, Pseudo R ² = 0.28 |
| Only establishments being parts of multi-establishment firms | -0.476 [-0.013] (4.05)*** | 1.945 [0.6675] (4.25)*** |
| | N = 3,559; Pseudo R ² = 0.16 | N = 81, Pseudo R ² = 0.52 |
| Separate estimations by employment growth | | |
| Only establishments with employment decline | -0.633 [-0.0119] (5.15)*** | 2.041 [0.6868] (3.09)*** |
| | N = 6,632; Pseudo R ² = 0.19 | N = 69, Pseudo R ² = 0.32 |
| Only establishments with no or positive employment growth | -0.588 [-0.0089] (6.89)*** | 0.718 [0.2137] (1.81)* |
| | N = 18,386; Pseudo R ² = 0.17 | N = 115, Pseudo R ² = 0.32 |
| Separate estimations by establishment size | | |
| Only establishments with 21-100 employees | -0.591 [-0.0124] (6.09)*** | 2.148 [0.7151] (4.19)*** |
| | N = 8,518; Pseudo R ² = 0.13 | N = 85, Pseudo R ² = 0.39 |
| Only establishments with 21-200 employees | -0.573 [-0.0137] (6.55)*** | 1.115 [0.3874] (3.12)*** |
| | N = 9,679; Pseudo R ² = 0.12 | N = 115, Pseudo R ² = 0.19 |
| Only establishments with 21-500 employees | -0.547 [-0.0145] (6.54)*** | 0.952 [0.3381] (3.07)*** |
| | N = 10,185; Pseudo R ² = 0.12 | N = 133, Pseudo R ² = 0.20 |

Method: Probit. The table shows the estimated coefficients on the dummy variable for owner-managers. Results on the control variables are suppressed to save space. Marginal effects are in square brackets and z-statistics are in parentheses. Standard errors are clustered at the establishment level. *** Statistically significant at the 1% level; ** at the 5% level.

Endnotes

¹ See, for example, Addison et al. (2001), Askildsen et al. (2006), Backes-Gellner and Tuor (2010), Ellguth and Promberger (2004), Frick and Moeller (2003), Grund and Schmitt (2013), Heywood and Jirjahn (2002, 2009), Huebler (2003), Huebler and Jirjahn (2003), Jirjahn (2008), Jirjahn and Kraft (2011), Smith (2006), Wagner (2008), and Zwick (2005).

² However, these establishments include about 40 percent of all workers.

³ The case of council substitution is analogous to that of union substitution discussed in Anglo-Saxon studies (Beldfield and Heywood 2004, Fiorito 2001, Fiorito et al. 1987, Godard 2009, Machin and Wood 2005).

⁴ The case of council suppression is analogous to that of union suppression documented for Anglo-Saxon countries (Baert and Omeij 2014, Cullinane and Dundon 2013, Gall 2004, Logan 2006, Schmitt and Zipperer 2009).

⁵ At the same time, owner-managers are less likely to view their relationship with a works council as bad (Jirjahn et al. 2011, Schloemer-Laufen et al. 2012). This might reflect that works councils in owner-managed firms are rather some type of toothless tiger.

⁶ Of course, hired managers also may to some extent gain utility from “consuming” dominance over their subordinates. However, this utility is likely to be smaller as hired managers are not the ultimate bosses of the firm. Thus, hired managers should have a less pronounced desire to avoid works councils.

⁷ Earlier studies on works councils and profitability used subjective profitability evaluations of managers as dependent variable (e.g., Addison et al. 2001, Dilger 2002). Those studies usually found a negative link between works councils and profitability. Mueller (2011) shows that regressions based on subjective profitability variables yield implausible results.

⁸ There is evidence that the interaction of works councils and collective bargaining coverage also plays a role in other dimensions of firm performance. Councils appear to be better able to negotiate performance pay arrangements and family friendly practices when the firm is covered by collective bargaining (Heywood and Jirjahn 2002, 2009). They have a stronger effect on reducing personnel turnover in covered firms (Frick and Moeller 2003, Heywood et al. 2010, Pfeifer 2011b). Furthermore, there is evidence that works councils and collective bargaining coverage exert a positive interaction effect on the innovation success of establishments (Jirjahn 2012).

⁹ The IAB assures the interviewees of an absolutely anonymous treatment of the data. Thus, interviewees have no incentive for strategic answers.

¹⁰ Nonetheless as a check of robustness we will also provide estimations that also include observations with more than two changes in works council status.

¹¹ In the estimation sample on works council introduction, establishments that introduce a works council are dropped in the years after the introduction if they continue to have a works council. In the estimation sample on the dissolution of newly adopted works councils, establishments with the dissolution of a works councils are dropped in the years after the dissolution if they continue to have no works council.

¹² The key explanatory variable is based on the question ‘Is your establishment managed: (a) solely by the owners or family members of the owners (b) solely by hired managers (c) or by both?’ Our variable is equal to 1 if the establishment falls into category (a) or in category (c). It is equal to 0 if the establishment falls into category (b). As a check of robustness, we excluded establishments falling into category (c) from the analysis. This exercise did not change our basic pattern of results.

¹³ The index is a modest variant on that in Burgess et al. (2000) and equals $1 - (H - S)^2 / (H + S)^2$. H and S are the non-negative hires and separations. It reaches a maximum of 1.0 when the number of hires and separations are equal. The index reaches a minimum of zero when there are only hires or only separations as these reflect either growth or decline with no churning. The only exception is when both hires and separations are zero and the index is undefined and set to zero by definition.

¹⁴ Mohrenweiser et al. (2012) have found a significantly positive influence of a reorganization of the establishment on the *successful* introduction of a works council. The coefficient on organizational change is insignificant in our estimation as we consider the introduction of a council in general (i.e., the council may survive or not).

¹⁵ The pattern of results also helps evaluate an alternative explanation for the finding that owner-managed establishments have a lower probability of works council introduction and survival than establishments run by hired managers. According to this explanation, the owners of a manager-run establishment may foster the introduction of a works council as an institution to monitor the management. If this explanation holds true, the owners of manager-run establishments should specifically foster works councils that are able to positively influence establishment performance. Yet, manager-run establishments have a higher probability of works council introduction and survival regardless of the circumstances that lead to favorable or less favorable works council effects. From a theoretical point of view it is also not clear if the owners of manager-run firms are in fact able to foster works councils as a monitoring device. The principal-agent problem entailed

by the separation of ownership and control implies that the managers rather than the owners of manager-run firms have the discretionary power to encourage or discourage works councils.

¹⁶ Researchers have applied similar aggregation identification strategies in other contexts. Machin and Wadhvani (1991) use the unionization rate within industries to instrument unionization at the establishment level. Lee (2004) uses the share of government jobs in a locality to instrument public sector employment by workers. Woessmann and West (2006) use average class size within schools as an instrument for actual class size. Cornelissen et al. (2011) use the share of workers receiving performance pay within industries to instrument the individual worker's chance of receiving performance pay.

¹⁷ Note that we can still include the 8 broadly defined industry dummies.