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Nonunion Worker Representation, Foreign Owners and the Performance of Establishments

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Abstract: Using German establishment data, this study provides the first econometric analysis on the interaction of establishment-level codetermination and foreign owners. Works councils are associated with higher productivity in domestic-owned establishments while they are associated with lower productivity in foreign-owned establishments. Moreover, the estimates show that the interaction of works councils with the broader industrial relations system also depends on the type of ownership. Works council incidence and collective bargaining coverage have a positive interaction effect on productivity in domestic-owned establishments. No such interaction effect can be found in foreign-owned establishments.

JEL: J53, J54, M54

Keywords: Works Council, Foreign Owners, Collective Bargaining, Productivity.

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1. Introduction

The determinants of firm performance play a key role in economics (Nickell 1995). However, there are different strands of studies focusing on different rather narrow subsets of determinants. The strands appear to be largely isolated. Determinants beyond the respective subset of primary interest are often not accounted for. This implies that potentially important interaction effects are also not considered. Based on the idea that multinational companies may have superior products or assets, one strand of studies examines the link between foreign ownership and firm performance (Bellmann and Jungnickel 2002, Conyon et al. 2002, Harris and Robinson 2002, 2003). The increasing interest in the effects of foreign ownership reflects the enormous growth of foreign direct investment in the last decades (UNCTAD 2004). A second strand of research, completely unrelated to the first one, examines the association between industrial relations and firm performance. The effects of unions, nonunion worker representation and HRM practices are at the center of this literature (Black and Lynch 2001, Doucouliagos and Laroche 2003, Freeman and Kleiner 2000, Jones and Kato 2011, Morikawa 2010).

This paper combines both strands of literature by examining the interaction effect of foreign ownership and works councils on the productivity of establishments in Germany. Works councils have attracted considerable attention as an alternative form of worker representation to improve both the quality of working life and economic performance. They play an important role in corporate governance in many West European countries (Rogers and Streeck 1995). Specifically German works councils have acquired extensive powers compared to councils in other countries (Thelen and Turner 1997). Those powers have even been strengthened by the actively debated 2001 amendment of the Works Constitution Act, the law that governs the works council system. Works councils play also a role outside Europe. In Korea, mandated councils deal with productivity concerns, training, and health and safety issues (Kleiner and Lee 1997). In Canada, mandatory health and safety committees have been introduced in several provinces. Further, committees must be set up in case of layoffs. The committees are similar to European works councils (Adams 1985). In the US, the interest in nonunion representation has been spurred by a sharp decline in union density and the growth of a 'representation gap' (Freeman and Rogers 1999). Much of the political discussion has centered on the idea of mandating German-style works councils.

While we are the first to examine the interaction effect of works councils and foreign owners on firm performance, there is a handful of within- and cross-country studies on the association between codetermination and foreign direct investment (Addison et al. 2003, Bognanno et al. 2005, Cooke 1997, 2001, Cooke and Noble 1998, Ham and Kleiner 2007, Schmitt 2003). However, even though investigating the link between foreign owners and codetermination deserves interest in its own right, this does tell us little about potential interaction effects on productivity. For example, higher labor costs might reduce the willingness of multinational companies to invest in countries with codetermination even if codetermination might help foreign owners to adapt to local conditions of the host country. Or alternatively, workers in foreign-owned establishments might be more likely to introduce works councils to protect their interests even though councils aggravate counterproductive conflicts with the foreign owners. Hence, in order to fully understand the role of foreign direct investment in the functioning of codetermination, we must directly consider interaction effects on firm performance.

From a theoretical point of view, the interaction of works councils and foreign owners is ambiguous. On the one hand, it may be positive. In foreign-owned establishments, there exists a high level of uncertainty and ambiguity from the workers' perspective. A works council ensuring that the foreign owners behave in accordance with their implicit and explicit obligations reduces this uncertainty and, hence, fosters workers' effort and cooperativeness. On the other hand, there may be a negative interaction. While the works council of the local establishment has no access to the information possessed by the parent company's managers, the managers of the foreign parent company lack sufficient information about local conditions of the subsidiary. The result is a lot of time spent in meetings and adversarial bargaining to find local solutions. Moreover, the council's power to protect employees' interests is weaker as foreign owners can more easily threaten to transfer production abroad. Finally, foreign owners may have a stronger shareholder value orientation implying a shorter time horizon and, hence, a lower interest in a cooperative relationship with the works council.

Our empirical examination is based on a large representative data set from the IAB Establishment Panel. Initial estimates with the combined sample suggest that both the presence of a dominant foreign owner and the presence of a works council are associated with higher productivity. The combined sample, however, hides a far richer pattern. Separate estimates show a strong negative interaction effect of foreign owners and establishment-level codetermination. While works councils are associated with higher productivity in domestic-owned establishment, they are associated with lower productivity in foreign-owned establishments.

Moreover, we take into account that establishment-level codetermination is part of a broader industrial relations system which involves worker representation through unions. Previous research has shown that works councils play a more productive role in establishments covered by collective bargaining agreements. This result fits the notion that a works council is more successful in increasing joint establishment surplus when distributional conflicts are moderated by unions and employers' associations outside the establishments. Our estimates provide new insights. They show that the interaction of works councils with collective bargaining coverage depends on the type of ownership. We find a positive interaction effect only in domestic-owned but not in foreign-owned establishments. This finding also suggests that the presence of foreign owners provides a challenge for the industrial relations in Germany.

The rest of the paper is organized as follows. In Section 2, the institutional framework is described. Section 3 presents our theoretical background discussion. Section 4 describes data, variables and estimation method. Initial estimates are presented in Section 5. Section 6 addresses the issue of endogeneity. Section 7 concludes.

2. Institutional Framework

Industrial relations in Germany are characterized by a dual structure of employee representation with both unions and works councils. While unions negotiate over wage rates and general aspects of the employment contracts, works councils provide a highly developed mechanism for establishment-level participation. Collective contracts are typically negotiated between unions and employers' associations on an industrial level. Employers are covered by industry-level agreements if they are members of employers' associations. The share of employers covered by firm-level agreements is very small.

Works councils are formally independent of collective bargaining. Their rights are defined in the Works Constitution Act (WCA). Workers in establishments with five or more employees may elect council members but the creation of the council depends on the initiative of the establishment's employees. Hence, councils are not present in all eligible establishments. They negotiate over a bundle of interrelated establishment policies. On some issues they have the right to information and consultation, on others a veto power over management initiatives and on 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 introduction of technical devices designed to monitor employee performance, and up and down grading. They also have consultation rights, though not as strong, in matters such as changes in equipment and working methods that affect job requirements, decisions relating to manpower planning and planned structural alterations to the plant. Their participation rights in financial and economic matters cover only information provision.

Works councils are institutionalized bodies of worker representation that have functions that are distinct from those of unions. According the WCA, works councils do not have the right to strike. If council and management fail to reach an agreement, they may appeal to an internal arbitration board or to the labor court. Moreover, the WCA does not allow wage negotiations. The aim is to restrict distributional conflicts on the establishment level. Rather works councils are designed to increase joint establishment surplus. Council representatives are required by law to cooperate with management "in a spirit of mutual trust . . . for the good of the employees and of the establishment."

3. Background Discussion

3.1 Economic Effects of Works Councils

The existence of information asymmetries and commitment problems is one explanation as to why work councils may play the intended role in fostering cooperative and trustful industrial relations within establishments. Employees will withhold effort and cooperation when an employer cannot credibly commit to take into account their interests. There is a variety of situations in which commitment problems can arise. For example, information asymmetries may cause workers to refuse concessions even when concessions are necessary to ensure competitiveness of the establishment. If employees do not share the same economic information possessed by management, they may fear that the employer overstates a crisis to demand greater concessions. Similarly, workers fearing job loss due to organizational change may try to sabotage a management-initiated restructuring of production. Moreover, if information about potentially performance-enhancing innovations is in the hands of the employees, they may not wish to reveal it for the fear that the employer may use the information to their disadvantage.

Worker representation is one way to protect the interests of the workforce and to foster workers' effort and cooperation resulting in mutual gains for the employees and the owners of the establishment (Askildsen et al. 2006, Freeman and Lazear 1995, Hogan 2001, Kaufman and Levine 2000, Osterloh and Frey 2006, Smith 1991, 2006). Providing works councils with information rights helps reducing information asymmetries. This makes it easier to verify employers' claims. Moreover, providing works councils with veto and coequal participation rights helps avoiding that employers unilaterally take actions without considering workers' interests. The councils' role in building trustful employer-employee relations is also strengthened by the legal requirement to cooperate with management. Altogether, the unique institutional design of works councils suggests that they have the potential to increase establishment performance by solving commitment problems.

However, from a theoretical view point, there are opposing effects making the relationship between works councils and establishment performance ambiguous. Codetermination requires meetings between works councillors and managers. The increased time spent in discussions may slow down decision making and, hence, may result in delayed decisions (Katzner 1995). Moreover, even though the WCA aims at restricting distributional conflicts, codetermination de facto may aggravate conflicts within the establishment. One possibility is that works councils use their codetermination rights not for increasing joint establishment surplus but rather for rent-seeking activities (Addison et al. 2001). A council may use its codetermination rights on social or personnel matters to obtain employer concessions even on issues where it has no legal powers. The council may negotiate higher wages and less productive work practices that require lower effort by the workers. A second possible scenario is that rent-seeking owners or managers are not interested in long-term cooperation with the workforce (Jirjahn 2003, Jirjahn and Smith 2006). They may rather prefer to maximize short-term profitability by reneging on implicit contracts with the employees. In this case management may spend resources in weakening the works council instead of investing those resources in performance-enhancing projects. This case can be compared with the case of union suppression documented for the US (Logan 2006, Schmitt and Zipperer 2007). The council may try to act as a countervailing power in order to protect employee interests. However, the likely outcome is a lot of time spent in adversarial bargaining.

Altogether, this line of reasoning suggests that the functioning of establishment-level codetermination depends on cooperative relationships between works council and management. Indeed sociological case studies reveal a wide range of industrial relations regimes characterized by different interactions of management and works councils (Frege 2002). Most of the econometric studies on the performance effects of works councils have ignored these interactions. Specifically, interactions of works councils and foreign owners have been neglected.

3.2 The Interaction with Foreign Owners

A crucial aspect of the managerial environment is whether the establishment is in the hands of domestic or foreign owners. The existence of multinational enterprises is often explained by their superior products or production processes to which other firms have no access (Helpman 1984, Markusen 1995). Specifically, knowledge-based assets embodied in the human capital of the employees, patents or other exclusive technical knowledge, copyrights or trademarks, or even more intangible assets such as management practices, know-how or the reputation of the firm give rise to foreign direct investment. These firm-specific assets can be transferred relatively easy back and forth across space. Moreover, like a public good within the firm, they can be supplied to additional production facilities at very low costs. However, even if multinational enterprises have superior firm-specific assets, this does not necessarily mean that foreign direct investment is always efficient. Multinational enterprises may use their superior assets for rent-seeking activities and exploitation of market power (Bellak 2004, Caves 1971).

The basic point for our analysis is that the personnel policy of foreign-owned firms differs (to a greater or lesser extent) from that of domestic-owned firms (Doeringer et al. 1998, Freeman et al. 2008, Poutsma et al. 2006, Walsh 2001). Even rent sharing across borders appears to play a role within multinational enterprises (Budd and Slaughter 2004, Budd et al. 2005). While this reflects the desire to use organizational capabilities worldwide as a source of competitive advantage, the personnel policy of foreign owners may also involve tensions with the cultural and institutional context of the host country (Kostova and Roth 2002). This brings us to the question whether there is an interaction effect between foreign owners and works councils in Germany.

From a theoretical viewpoint the sign of the interaction effect is ambiguous. Agell (1999) has argued that employee representation is particularly important in order to insure workers against the high risks associated with international trade. A related reasoning might hold true for foreign ownership. If the local establishment adopts practices from its foreign parent company, there is a high level of uncertainty and ambiguity from the workers' perspective. This in turn may result in resistance to change from production and supervisory employees. Change requires renewed effort on the part of the employees. Moreover, superiors may fear that they will lose authority when a radical reorganization takes place. Workers may suspect that they will lose their jobs due to competence-destroying change. A works council may ensure that the foreign parent company behaves in accordance with its implicit and explicit commitments and that it does not take excessive advantage of the local establishment. Hence, the council may help to build the trust necessary for a successful adoption of the parent company's practices. This suggests a positive interaction of codetermination and foreign ownership.

However, as indicated by case studies (Mueller 1998, Looise and Drucker 2003, Raess and Burgoon 2006, Royle 1998), there may be opposing effects resulting in a negative interaction. First, important decisions are made by managers of the foreign parent company and not by managers of the local establishment. As the council of the local establishment has only very limited access to the information possessed by the parent company's managers, it is less effective in reducing information asymmetries and building trust. Quite the contrary, the council is more likely to resist change if it has no access to relevant information and, hence, distrusts foreign owners. Lack of transparency implies that it is more difficult for local managers to convince the council. The result is a lot of time spent in meetings and adversarial bargaining. In this situation, a council may rather hinder an effective reorganization. Moreover, even if local managers and works council find a solution, local managers have to convince the head office. If managers of the foreign parent company lack sufficient information about local conditions of the subsidiary, they are less likely to agree. This may be also the case if the parent company's managers have little experience with codetermination. In this sense, the intervention of an uninformed or inexperienced third party complicates negotiations between local managers and works councils and, hence, results in delayed decisions.

Second, evidence from Britain suggests that strong worker organizations are more likely to play a productive voice role (Bryson 2004, Fernie and Metcalf 1995). This may also hold true for Germany. Only a strong works council may be able to protect workers against employer opportunism and, hence, to foster trust and cooperation. Yet, foreign ownership is very likely to weaken the bargaining strength of worker organizations. If the foreign owner maintains capacity to produce the same good in different national markets, the foreign owner can more easily threaten to transfer production abroad (Caves 1996, Fabbri et al. 2003, Slaughter 2007).[1] As a consequence of lower bargaining power, the works council is less effective in punishing employer opportunism. This in turn increases the employer's incentive to renege on promises made to the workforce. While employer opportunism may increase short-term profitability, it destroys trust and cooperation and, hence, harms productivity. Moreover, if the works council cannot effectively protect employees against employer opportunism, it may use its remaining bargaining power to specialize in rent seeking activities. Gaston (2002) presents a formal model showing that worker organizations with lower bargaining power place greater weight on redistribution. This is also likely to result in lower productivity.

Third, the 'varieties of capitalism' approach suggests that patient capital and codetermination are complementary institutions contributing to increased firm performance (Hall and Soskice 2001, Soskice 1999). According to this view, codetermination requires patient capital to cooperatively realize long-term mutual gains for investors and employees. Yet, foreign owners are often thought to have a stronger focus on shareholder value (Fiss and Zajac 2004, Jackson et al. 2005). This may particularly hold true for Germany that experienced a rise of Anglo-American investors. To the extent shareholder value orientation is associated with a shorter time horizon of investors, management is less interested in building long-term cooperation.[2] If managers prefer short-term profitability over long-term growth, they will spend time and effort in isolating and weakening the council. This in turn is very likely to decrease productivity.

3.3 The Interaction with Collective Bargaining Coverage

We also take into account that works councils are part of a broader industrial relations system which involves worker representation through unions. Even though establishment-level codetermination and collective bargaining are formally independent, there appears to be an important interaction. Building on Freeman and Lazear (1995), Huebler and Jirjahn (2003) argue that collective bargaining coverage reduces distributional conflict within establishments, allowing councils to play a more productive role and engage in less rent seeking. Huebler and Jirjahn's empirical analysis provides supporting evidence for this hypothesis. They find a positive interaction effect of works councils and collective bargaining coverage on productivity. This positive interaction effect on productivity is confirmed by several other studies (Renaud 2008, Wagner 2008, Wagner et al. 2006). Moreover, there is evidence that the interaction of works councils and collective bargaining also plays a role in other dimensions of establishment performance. Works councils appear to be better able to negotiate successful performance pay arrangements and family friendly practices when the workplace is covered by collective bargaining (Heywood and Jirjahn 2002, 2009, Heywood et al. 1998). They also have a stronger effect on reducing personnel turnover in covered establishments (Heywood et al. 2010, Frick and Moeller 2003, Pfeifer 2011). There is even recent evidence of a positive interaction effect on the profitability of establishments (Mueller 2011).

In what follows, we examine if the interaction of works councils with collective bargaining coverage differs between domestic- and foreign-owned establishments. On the one hand, a reduction of distributional conflicts may be of specific importance to reduce the tensions between foreign owners and works councils. This would suggests that the interaction effect should be particularly strong in foreign-owned establishments. On the other hand, if the tensions are too severe, collective bargaining coverage may not help in creating a cooperative relationship between works councils and foreign owners. This suggests that there is a less strong or even no interaction effect of works councils and collective bargaining in foreign-owned establishments. A pronounced interaction effect should rather be found in domestic-owned establishments as it is easier to create cooperative industrial relations in these establishments.

4. Data, Variables and Method

We draw data from the IAB Establishment Panel of the Institute for Employment Research (Koelling 2000). 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. Infratest Sozialforschung, a professional survey and opinion research institute, conducts the interviews. The data are collected on the basis of a questionnaire and personal interviews with the owner or top manager of the establishment. 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 sampled in successive waves.

In the year 2000 the sample was substantially increased. As the WCA has been reformed in 2001, we use waves 2001 to 2007 for our empirical analysis. The dependent variable is log of productivity, with productivity being defined as value added (sales – material costs) per employee. Each wave of interviews provides retrospective information on productivity of the previous year. In order to regress productivity on establishment characteristics of the same year, this information is related to explanatory variables provided by the previous wave. Hence, we examine the determinants of establishment performance for the years 2001 to 2006. For our analysis, we exclude nonprofit organizations, the public sector, mining, construction, fishing, and agriculture, hunting and forestry. Furthermore, banking and insurance are excluded because of different output measures. Finally, as the WCA only applies to establishments with at least five employees, the analysis is restricted to establishments that meet this minimum size. After eliminating observations for which full information is not available, the sample size is 12,285. *Table 1* shows definitions and descriptive statistics of the variables used.

Most importantly, the survey provides information on works council incidence, collective bargaining coverage, and the presence of a dominant foreign owner. Moreover, it allows including a rich set of further explanatory variables. We control for the establishment's capital intensity.[3] Moreover, information on employer-provided further training, profit sharing, and employee share ownership is available. In our sample period, the use of profit sharing and employee share ownership plans was asked in 2001 and 2005. For each type of incentive scheme we construct an ordered variable (0 = no use in both years, 0.5 = use in only one year, 1 = use in both years). These variables are imputed to each wave. The two ordered variables can be interpreted as proxies for the establishment's propensity to rely on collective incentives. Finally, control variables for industry affiliation, year of observation, location in East Germany, single-establishment status, vintage of production technology, personnel turnover, usual weekly hours and workforce composition are included. Specifically controlling for the composition of the workforce appears to be important as Doucouliagos and Laroche (2003) have shown that the estimated effect of worker representation can crucially depend on those controls. Thus, variables for the proportions of women, part-time employees, skilled employees and apprentices are included.

We provide both OLS and random effects regressions. The random effects model is estimated by generalized least squares. Let $\ln(Y_{it})$ be the log of establishment *i*'s (*i* = 1, …, *N*) productivity in year *t* (*t* = 2001, …, 2006). The random effects model is given by

$$\ln(Y_{it}) = \boldsymbol{\alpha}' \boldsymbol{x}_{it} + \varepsilon_{it} + u_i , \tag{1}$$

where $\boldsymbol{x}_{it}$ is the vector of establishment characteristics, $\boldsymbol{\alpha}$ the vector of coefficients, ε_{it} the time-varying error term, and u_i the random error component that is associated with each establishment but invariant over time. If the cross-sectional units are drawn from a large population, it is reasonable to view establishment-specific constant effects as randomly across these units (Greene 2002). A potential limitation of the model may be the requirement that the random effects are uncorrelated with the other regressors. The inclusion of a rich set of establishment controls available in the data set should, however, mitigates this problem.

Compared to a fixed effects approach, the random effects model has the advantage that it allows including time-invariant explanatory variables in the regression. This is important as only a few establishments change their works council status. Hence, the variable for works council incidence is nearly time-invariant. Moreover, even if there would be a sufficient percentage of establishments changing their works council status, a fixed effects model would be very likely to produce misleading estimates in our context. Given that our sample covers a relatively short period of six years, that model would only estimate short-term effects of changes in works council status within this period. Jirjahn et al. (2011) provide evidence that the economic effects of newly created works councils are rather weak. Hence, the results obtained from fixed effects estimations cannot be generalized to the entire population of works councils.

5. Empirical Analysis

Our empirical strategy is as follows: First, we provide initial estimates with the combined sample of domestic- and foreign-owned establishments. Second, we perform separate estimates in order to examine if the association between works councils and performance differs between both types of establishments. Third, we expand the specification by including a variable for the interaction of works councils with collective bargaining coverage.

Table 2 provides the initial regression results.[4] Column (1) shows the OLS and column (2) the random effects estimates. Both approaches yield very similar results. Many of the control variables take statistically significant coefficients of the expected sign. Capital intensity, technology, profit sharing, employer-provided further training, and the share of skilled employees are positive determinants of productivity. Personnel turnover, weekly hours, and the shares of women, part-time employees and apprentices play a negative role.[5] Furthermore, establishments in East Germany and single establishments appear to be less productive.[6]

Most importantly, both the presence of foreign owners and the incidence of a works council are positively associated with productivity. This conforms to the previously unrelated research on the performance effects of foreign owners and worker representation. The estimated coefficients are not only statistically but also economically significant. Considering the random effects estimates, the presence of a foreign owner is associated with a roughly 10 percent and the incidence of a works council with a roughly 14 percent increase in productivity. The question at issue is now whether foreign owners and works councils have an interaction effect.

Table 3 provides separate estimates for domestic- and foreign-owned establishments. The OLS as well as the random effects regressions show that the link between works councils and performance differs sharply between both types of establishments. In domestic-owned establishments, the incidence of a works council is associated with significantly higher productivity. The random effects model suggests that the increase in productivity is about 15 percent. By contrast, in foreign-owned establishments, it is associated with significantly lower productivity. The random effects estimation implies that the decrease in productivity is about 19 percent.

These findings provide evidence that the functioning of establishment-level codetermination critically depends on the type of ownership. In domestic-owned establishments, works councils appear to play the intended role in creating joint establishment surplus. This conforms to theories suggesting that works councils can increase performance by building trust and cooperation. Yet, in foreign-owned establishments, codetermination appears to play a rather counter-productive role. As outlined in our theoretical section, there may be three reasons for this negative interaction effect. First, a high degree of opacity and the intervention of a rather inexperienced foreign parent company complicate negotiations between council and local management. Second, the potential threat of transferring production abroad reduces the council's power to protect employees against employer opportunism. As a consequence, the council is likely to use its remaining bargaining power to engage in rent seeking activities. Third, foreign owners may have a stronger focus on shareholder value. To the extent this implies a shorter time horizon, management is less interested in long-term cooperation with the works council. This in turn is likely to result in adversarial industrial relations.

However, the estimates provide evidence that collective bargaining coverage plays a positive role in the performance of foreign-owned establishments. The finding may suggest that foreign-owned establishments are generally more productive when distributional conflicts are moderated outside the establishment. This raises the question of whether collective bargaining also helps works councils to play a more productive role.

Hence, as a further step, we include a variable for the interaction of works councils with collective bargaining coverage. The results are shown in *Table 4*. Regressions (1a) and (2a) provide no evidence that works councils interact with collective bargaining coverage in foreign-owned establishments. The strong interference of foreign owners with establishment-level codetermination seems to hinder that collective bargaining coverage induces a more productive role of works councils. The negative coefficient on council incidence remains significant in the OLS but not in the random effects regression. However, there is even a relatively high T-statistic ($|t| = 1.60$) in the random effects estimation. As the interaction of works councils and collective bargaining plays no significant role in the productivity of foreign-owned establishments, we prefer the specification without the interaction variable when we analyze these establishments.

By contrast, as shown in columns (1b) and (2b), there is a significantly positive interaction effect of works councils with collective bargaining coverage in domestic-owned establishments. Moreover, the positive coefficient on council incidence remains statistically significant. Hence, the estimates provide evidence of a positive productivity effect of works councils in domestic-owned establishments which is stronger if the establishment is covered by a collective agreement. The random effects model suggests that the incidence of a council is associated with an 11 percent higher productivity in uncovered establishments and with an 18 percent higher productivity in covered establishments. Altogether, the results for domestic-owned establishments support the hypothesis that works councils play a specifically strong role in economic performance when distributional conflicts are moderated outside the establishment.

6. Conclusions

From a theoretical viewpoint the interplay between foreign owners and codetermination is not clear. On the one hand, works councils may reduce the high degree of uncertainty and ambiguity existing in foreign-owned establishments. This may foster workers' effort and cooperation. On the other hand, limited access to information possessed by the foreign parent company's managers, reduced power of the council to protect workers' interests, and a possibly stronger focus of foreign owners on short-term shareholder value may result in adversarial industrial relations and delayed decisions. Using the IAB Establishment Panel, our empirical analysis provides evidence of a negative interaction effect. In domestic-owned establishments, works councils are associated with higher establishment performance. In contrast, they are negatively associated with establishment performance in foreign-owned establishments. Moreover, our estimates show that the incidence of a works council interacts positively with collective bargaining coverage in domestic-owned establishments. No such interaction effect can be found for foreign-owned establishments. Altogether, our findings support the view that foreign direct investment is a challenge for the functioning of the dual industrial relations system in

Germany.

Finally, we recognize the need for continued research within this theme. First, learning can play a role in the functioning of codetermination. It would be interesting to examine if learning can mitigate the interference of foreign owners with works councils. Second, distinguishing between different types of foreign owners could yield further insights. This would allow examining if the interference is driven by specific types of foreign owners.

Table 1: Variable Definitions and Descriptive Statistics *(N = 12,285)*

Variable	*Definition*	*Mean, Std. Dev.*
Ln(Productivity)	Log of value added (in Euros) per employee.	10.72, .9134
Ln(Capital Intensity)	Log of capital (in Euros) per employee.	10.48, 1.429
Technology	Ordered variable for the vintage of production technology used (1 = very old, …, 5 = state of the art technology).	3.858, .7361
Single Establishment	Dummy equals 1 if the establishment has no subsidiaries in Germany and is not itself a subsidiary of another establishment in Germany. The dummy equals 0 if the establishment is part of a multi-establishment firm in Germany.	.7018, .4575
East Germany	Dummy equals 1 if the establishment is located in East Germany.	.3587, .4796
Women	Female employees as a share of total employees (in %).	34.61, 25.24
Part-time Employees	Part-time employees as a share of total employees (in %).	15.34, 19.45
Apprentices	Apprentices as a share of total employees (in %).	5.005, 6.286
Skilled Employees	Skilled blue-collar and white-collar employees as a proportion of total employees (in %).	75.70, 26.30
Churning Rate	Worker flows in excess of job flows (in %).	4.594, 12.94
Weekly Hours	Usual weekly hours in the establishment excluding overtime hours.	38.56, 2.065
Further Training	Proportion of employees who participated in employer-provided further training in the first half of the current year (in %).	19.99, 19.28
Collective Agreement	Dummy equals 1 if the establishment is covered by a collective bargaining agreement.	.5618, .4962
Share Ownership	Ordered variable indicating a share ownership plan for the employees (0 = the establishment has no plan in 2001 and 2005, 0.5 = the establishment has a plan in one of the years, 1 = the establishment has a plan in both years).	.0560, .2299
Profit Sharing	Ordered variable indicating a profit sharing plan for the employees (0 = the establishment has no plan in 2001 and 2005, 0.5 = the establishment has a plan in one of the years, 1 = the establishment has a plan in both years).	.2450, .4301
Foreign Owner	Dummy equals 1 if a foreign owner is the majority owner of the establishment.	.1002, .3002
Works Council	Dummy equals 1 if a works council is present in the establishment.	.4571, .4982
Works Council x Collective Agreement	Works council interacted with collective agreement.	.3675, .4821
Sector Dummies	Dummies for 25 industrial groups.	----
Time Dummies	Dummies for the years 2001 to 2005.	----

Table 2: Initial Estimates

Variable	OLS (1)	Random Effects (2)
Ln(Capital Intensity)	.1487 (.0114)***	.1887 (.0088)***
Technology	.0568 (.0144)***	.0158 (.0092)*
Single Establishment	-.1200 (.0291)***	-.0451 (.0181)**
East Germany	-.2337 (.0353)***	-.2433 (.0278)***
Women	-.0009 (.0008)	-.0011 (.0005)**
Part-time Employees	-.0081 (.0009)***	-.0046 (.0005)***
Apprentices	-.0139 (.0021)***	-.0061 (.0013)***
Skilled Employees	.0020 (.0005)***	.0013 (.0003)***
Churning Rate	-.0025 (.0009)***	-.0003 (.0005)
Weekly Hours	-.0283 (.0153)*	-.0137 (.0049)***
Further Training	.0007 (.0008)	.0130 (.0007)**
Collective Agreement	.0295 (.0292)	.0166 (.0166)
Share Ownership	.0578 (.0553)	.0470 (.0546)
Profit Sharing	.1241 (.0305)***	.1531 (.0300)***
Foreign Owner	.1410 (.0418)***	.0961 (.0324)***
Works Council	.1453 (.0340)***	.1414 (.0226)***
Constant	10.21 (.6256)***	8.421 (.4819)***
Sector Dummies	Included	Included
Time Dummies	Included	Included
Number of Observations	12,285	12,285
Number of Establishments	3,616	3,616
R^2	.3044	.2917
Rho	-----	.6810

Dependent variable: Ln(Productivity). Rho is the share of total variation of the error term coming from the time-invariant component. Standard errors are in parentheses. * Statistically significant at the 10 percent level; ** at the five percent level; *** at the 1 percent level.

Table 3: Separate Estimates for Domestic- and Foreign-Owned Establishments

Variable	OLS		Random Effects	
	Foreign Owners (1a)	Domestic Owners (1b)	Foreign Owners (2a)	Domestic Owners (2b)
Ln(Capital Intensity)	.1681 (.0388)***	.1470 (.0118)***	.1348 (.0329)***	.1891 (.0091)***
Technology	.0417 (.0392)	.0538 (.0151)***	.0078 (.0274)	.0163 (.0098)*
Single Establishment	-.0912 (.0640)	-.1222 (.0318)***	.0074 (.0459)	-.0493 (.0120)**
East Germany	-.2368 (.1144)**	-.2412 (.0366)***	-.2848 (.1043)***	-.2477 (.0287)***
Women	.0020 (.0026)	-.0011 (.0008)	.0003 (.0019)	-.0010 (.0005)*
Part-time Employees	-.0074 (.0031)**	-.0081 (.0009)***	-.0043 (.0029)	-.0046 (.0005)***
Apprentices	.0030 (.0135)	-.0135 (.0021)***	.0035 (.0086)	-.0062 (.0013)***
Skilled Employees	.0051 (.0016)***	.0017 (.0005)***	.0037 (.0012)***	.0012 (.0004)***
Churning Rate	.0004 (.0039)	-.0027 (.0009)***	-.0011 (.0019)	-.0003 (.0005)
Weekly Hours	.0284 (.0197)	-.0328 (.0165)**	.0342 (.0189)*	-.0157 (.0050)***
Further Training	.0021 (.0018)	.0007 (.0009)	.0027 (.0019)	.0010 (.0007)
Collective Agreement	.2396 (.0960)**	.0245 (.0302)	.1550 (.0696)**	.0124 (.0172)
Share Ownership	.0294 (.0748)	.0482 (.0644)	.0878 (.1348)	.0315 (.0590)
Profit Sharing	.0828 (.0705)	.1281 (.0331)***	.0318 (.0829)	.1688 (.0319)***
Works Council	-.3497 (.1174)***	.1615 (.0353)***	-.1867 (.0858)***	.1509 (.0235)***
Constant	7.921 (.9410)***	10.45 (.6693)***	8.224 (1.106)***	7.919 (.5805)***
Sector Dummies	Included	Included	Included	Included
Time Dummies	Included	Included	Included	Included
Number of Observations	1,231	11,054	1,231	11,054
Number of Establishments	387	3,318	387	3,318
R^2	.2776	.2956	.2428	.2829
Rho	-----	-----	.7491	.6713

Dependent variable: Ln(Productivity). Rho is the share of total variation of the error term coming from the time-invariant component. Standard errors are in parentheses. * Statistically significant at the 10 percent level; ** at the five percent level; *** at the 1 percent level.

Table 4: The Interaction of Works Councils with Collective Bargaining Coverage

Variable	OLS		Random Effects	
	Foreign Owners (1a)	Domestic Owners (1b)	Foreign Owners (2a)	Domestic Owners (2b)
Collective Agreement	.3554 (.2157)	-.0169 (.0315)	.2012 (.1237)	-.0082 (.0201)
Works Council	-.3119 (.1334)**	.0853 (.0353)*	-.1622 (.1015)	.1090 (.0316)***
Works Council x Collective Agreement	-.1423 (.2355)	.1235 (.0561)**	-.0635 (.1404)	.0686 (.0346)**
Number of Observations	1,231	11,054	1,231	11,054
Number of Establishments	387	3,318	387	3,318
R^2	.2781	.2964	.2431	.2837
Rho	-----	-----	.7489	.6707

Dependent variable: Ln(Productivity). Rho is the share of total variation of the error term coming from the time-invariant component. Standard errors are in parentheses. * Statistically significant at the 10 percent level; ** at the five percent level; *** at the 1 percent level. Note that all control variables listed in Table 3 are included in each estimation but are suppressed to save space.

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Endnotes

[1] Indeed, several empirical studies confirm that multinational enterprises are (to a greater or lesser extent) footloose. Using Irish data, Goerg and Strobl (2003) show that multinational enterprises are more likely to close local plants. Bernard and Sjoeholm (2003) obtain a similar result for Indonesia. Girma and Goerg (2004) find for the UK that foreign owned firms have higher levels of outsourcing. Relatedly, Scheve and Slaughter (2004) show for the UK that foreign ownership is associated with individual perceptions of economic insecurity. Indeed, Andrews et al. (2007) find for Germany that foreign ownership is associated with increased job insecurity. Finally, Navaretti et al. (2003) use data from eleven European countries to show that employment adjustment in foreign-owned firms is faster than in domestic firms. Moreover, foreign-owned firms appear to be able to bypass national labor market regulations.

[2] The extreme case is the breach of trust in hostile takeovers (Shleifer and Summers 1988). Indeed, barriers to hostile takeovers seem to have significantly eroded in Germany (Jackson et al. 2005). A prominent example is the takeover of Mannesmann by Vodafone in the year 2000.

[3] The survey contains information on investment. Building on an approximation provided by Mueller (2008), this information can be used to calculate the capital stock.

[4] For the OLS estimates, robust standard errors are based on the Huber-White sandwich estimator to account for cross period correlation of the random disturbances influencing the establishment's performance.

[5] The negative link between working time and productivity confirms findings by Schank (2003).

[6] Note that not only domestic-owned but also foreign-owned establishments can be single establishments within Germany. A foreign-owned establishment is a single establishment if it is not part of a foreign-owned multi-establishment firm within Germany.