

Jirjahn, Uwe; Heywood, John S.

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# Variable Pay, Industrial Relations and Foreign Ownership: Evidence from Germany

John S. Heywood  
University of Wisconsin-Milwaukee, USA

Uwe Jirjahn  
University of Trier, Germany

## Abstract

We use a representative sample of German establishments to show that those with foreign ownership are more likely to use performance appraisal, profit sharing and employee share ownership than are those with domestic ownership. Moreover, we show that works councils are associated with an increased probability of using each of the three practices when under domestic ownership but not when under foreign ownership. These results inform the on-going debate over institutional duality, the extent to which foreign firms adopt uniform practices independent of local institutions and the extent to which they adapt and participate in those local institutions.

Keywords: Foreign Ownership, Works Councils, Performance Appraisal, Profit Sharing,  
Employee Share Ownership.

## **1. Introduction**

Recent decades have witnessed an enormous growth in foreign direct investment (FDI) around the world (UNCTAD 2004). The growth in corporate globalization has stimulated both substantial public and academic interest in the consequences for the national industrial relations systems. Yet, there remains surprisingly little systematic evidence on how the functioning of a country's industrial relations institutions is affected by FDI.<sup>1</sup> This paper provides an econometric analysis for Germany. It examines the influence of foreign ownership and the interaction effect of foreign ownership and works councils on the use of three types of HRM practices associated with variable pay: performance appraisal, profit sharing and employee share ownership.

This examination reflects our broad interest in the extent to which foreign multinational firms adapt to local institutions and the incentives that those institutions create. On the one hand, multinationals in Germany face internal pressure to conform to the standardized personnel policies of their firms, firms that cross international boundaries and are headquartered elsewhere. On the other hand, these personnel policies of multinationals often involve tensions with the institutional patterns of the host country including establishment-level codetermination by works councils. We explore this conflict, a conflict identified by Kostova and Roth (2002) as "institutional duality."

Examining the interaction effect of foreign ownership with works councils is particularly interesting as previous work has shown that German works councils can foster workers' cooperation and contribute to increased establishment performance (Freeman and Lazear 1995). Works councils play an information sharing and contract enforcement role. This role reduces the risk to workers from unilateral management

decisions making workers more willing to accept increased supervision and variable pay (Heywood et al. 1998, Heywood and Jirjahn 2002). Yet, cooperative and trustful relationships between management and works councils typically take time to develop and, for domestic firms, this occurs in a context without institutional duality.

We hypothesize that foreign ownership greatly attenuates the influence of works councils on variable pay. As important managerial decisions are made overseas and the works council of the local establishment has only limited access to information possessed by the parent company's managers, it is more difficult to create trust and cooperation. In addition, the parent company's managers may lack sufficient information about the local conditions of the subsidiary and are typically more familiar with foreign (often American) institutions that are less co-deterministic. Taken together, this makes local solutions less likely and increases the probability that relationships with works councils will not mirror those at firms with domestic ownership. Foreign owned establishments will tend to move more unilaterally to adopt variable pay schemes as part of exploiting the strategic advantages of their parent company. This weakens the traditional trust-building role of the works council and may leave the relationship between council and management characterized by increased distrust and antagonism.

Using the unusually rich data of the IAB Establishment Panel, we provide the first econometric analysis on the intertwined roles of foreign ownership and works councils in the use of three important types of personnel policies. We demonstrate that the use of individual performance appraisal, the use of profit sharing and the use of employee stock ownership share important patterns. Each practice is more likely in establishments with foreign ownership. Confirming past results, we find that among firms with domestic

ownership, works councils are associated with a greater likelihood of using each of these HRM practices. For the first time, we show that the presence of works councils plays no positive role in the use of these practices among establishments with foreign ownership. We take this result as evidence of institutional duality. Works councils in establishments with foreign ownership appear to play a different role in negotiating over these practices than do councils in establishments with domestic ownership. Supporting the importance of such duality, the result we find on the interaction of councils with foreign ownership persists even holding constant the extent of an establishment's exports to global markets.

In the next section we provide a background discussion. We explore previous literature and establish our testable hypotheses about the role of works councils and foreign owners. The third section presents the data and variables while the fourth section presents the results and several robustness checks. The fifth section concludes and makes suggestions for future research.

## **2. Background Discussion**

In this section we draw on past research to argue for our hypothesis that the role of works councils in establishing variable pay differs between German establishments with domestic and foreign ownership. The first subsection describes the potential and pitfalls associated with adopting variable pay and emphasizes that past work both theoretical and empirical suggests that works councils make variable pay more likely among German establishments with domestic ownership. They do so by using the institutional tools of codetermination that increase the trust workers have in the effectiveness and fairness of the resulting appraisal and variable pay schemes. The second subsection outlines how

institutional duality increases the pressure on local Germany subsidiaries to take unilateral action on variable pay and how foreign ownership can undermine the institution of codetermination. As a consequence, workers are less likely to trust that the resulting variable pay schemes are effective and fair suggesting that works councils may not be positively associated with variable pay among foreign owned firms.

### *2.1 Works Councils and Variable Pay*

Variable pay potentially involves both productive and dysfunctional incentive effects. Productive incentives are more likely to dominate if workers are confident that the process of determining pay accords with procedural fairness norms and that promises will be kept. Hence, institutions contributing to trustful employer-employee relations might foster the use of variable pay schemes as they increase the positive incentive effects of these schemes. Works councils in Germany have been claimed to be such institution. We briefly describe the productive and dysfunctional incentive effects of variable pay and then focus on the role of German works councils.

At their best, variable pay schemes provide incentives to exert effort by aligning workers' interests with those of firm owners. While, simple piece rates reward the quantity of produced output, performance appraisal systems use more comprehensive measurement of worker performance to provide incentives (Brown and Heywood 2005). The appraisal involves subjective evaluations by superiors of dimensions of worker behavior for which objective indicators are unavailable. While performance appraisal typically measures individual worker performance, profit sharing and employee share ownership represent collective incentive schemes based on overall firm performance.

Thus, they reward every type of effort that increases firm performance. Theory suggests that profit sharing and employee share ownership provide incentives for flexibility, multitasking and helping on the job (Baker 2002, Drago and Turnbull 1988, 1991, Jirjahn 2000). At the same time, they are often thought to involve a free rider problem (Oyer 2004) that must be mitigated or solved by mutual monitoring and peer pressure (Carpenter et al. 2009, Freeman et al. 2010, Kandel and Lazear 1992).

Despite the potential to align interests, variable pay can also entail a series of dysfunctional incentives that may be more likely when employer-employee relations are characterized by distrust (Heywood and Jirjahn 2006). A well known example is the ratchet effect (Charness et al. 2011). Workers, receiving variable pay, withhold effort when they fear that the employer will increase performance standards after a period of good performance. In addition, performance appraisals involve a high degree of discretion which can result in arbitrary measurement. The employer may underreport workers' performance to save firm resources (Prendergast 1999). The discretion also implies that superiors' prejudices and preferences toward subordinates can enter the process (MacLeod 2003, Prendergast and Topel 1996).<sup>2</sup> The resulting arbitrary inequality can undermine cooperation among workers and induces unproductive influence activities (Milgrom and Roberts 1988).<sup>3</sup> Even profit sharing and employee share ownership may generate dysfunctional incentives. Collective schemes can induce excessive peer pressure (Barron and Gjerde 1997) resulting in increased conflict among workers (Heywood et al. 2005, Orr 2001). Moreover, collective schemes will not stimulate effort if workers do not trust the accounting of profit or fear that management does not pursue complementary investments designed to increase financial performance (Chisholm 1997). As a

consequence, workers may object to performance pay fearing that genuine performance cannot be verified and that it will unfairly differentiate wages (Barth et al. 2012).

Works councils provide a highly developed mechanism for establishment-level codetermination (Addison 2009, Keller 2004, Mueller-Jentsch 1995) that has the potential to overcome these objections. The rights of councils 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. 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 participation in the design and implementation of policy. Crucially, their rights are strongest in social and personnel matters including the *introduction of payment methods* as well as the allocation of working hours and *the introduction of devices designed to monitor employee performance*. Works councils are institutionalized bodies of worker representation that have functions distinct from those of unions. They do not have the right to strike. If council and management fail to reach an agreement, they may appeal to an internal arbitration board. This shall restrict distributional conflicts at the establishment level so that works councils can help increase joint establishment surplus. The WCA makes clear that the aim is cooperation "in a spirit of mutual trust...for the good of the employees and of the establishment."

Theoretical analyses suggest that a works council can play a trust-building role by mitigating the employer's commitment problems (Freeman and Lazear 1995). The consultation rights of the council help reduce information asymmetries between management and workers so that employees can better observe and evaluate the



employer's behavior. Moreover, the codetermination requirements help the council prevent the employer from unilaterally taking action without considering workers' interests (Jirjahn 2009). Worker representation thus helps create binding commitments. It may also help reduce supervisor opportunism within the hierarchy as it provides communication between workers and top managers that is not filtered by immediate superiors (Kaufman and Levine 2000, Smith 1991).

This reasoning applies to the implementation and operation of variable pay schemes. A works council helps ensure that any plan is implemented as agreed upon. The codetermination rights of the council also help prevent the employer from unilaterally altering the payment terms. Moreover, worker representatives can monitor the accounting of profit and participate in decisions that influence the financial performance of the establishment. Works councils can also contribute to procedural fairness by helping set clear performance standards and make performance appraisal more transparent. Altogether, the ability of the works council to help create and enforce both appraisal and variable payment schemes can increase the trust workers have in such arrangements. Increased trust in turn improves the productive incentive effects of those schemes. As a consequence, the employer has an increased interest in using the schemes when a works council is present. The employer may even ask the council to participate in the design, implementation and operation of the appraisal and variable pay schemes in order to strengthen workers' support and cooperation.

Indeed, empirical studies confirm that works council presence is positively associated with the use of variable pay.<sup>4</sup> Heywood et al. (1998) and Heywood and Jirjahn (2002, 2006) find a positive link between works councils and the use of both piece rates

and profit sharing schemes. Breuer and Zimmermann (2010) show that councils are positively associated with the use of performance appraisal while Addison et al. (2003) provide indications of a positive link between share ownership schemes and work councils.

Thus, each of the three variable pay indicators we examine have been linked positively to the presence of works councils. As suggested, the most routine explanation has been the ability of the council to help in building trust and cooperation by mitigating the employer's commitment problem.<sup>5</sup> While this explanation fits with the intention of the WCA, the influence of works councils is not completely predetermined by the letter of the law and can vary dramatically depending on the circumstance. Specifically, the positive functioning of councils depends on, or at least is reinforced by, positive managerial attitudes toward cooperation. The critical role of managerial attitudes toward works councils and cooperation has been confirmed in both sociological case studies (Frege 2002) and econometric examinations (Jirjahn 2003, Jirjahn and Smith 2006, Pfeifer 2011). This work suggests that more successful outcomes emerge from codetermination when relations between council and management are cooperative. More pointedly, a series of case studies emphasize that cooperation between managers and works councils is less likely when the establishment has foreign ownership (Mueller 1998, Raess and Burgoon 2006, Royle 1998, 2004, Wever 1995). Indeed, Jirjahn and Mueller (2011) show that cooperative relationships are harder to achieve in foreign owned establishments and estimate a negative interaction effect of works councils and foreign ownership on productivity. In the next section we argue that a similar interaction effect may exist when estimating the use of variable pay.

## *2.2 The Role of Foreign Ownership*

The personnel policies of establishments with foreign ownership differ (to a greater or lesser extent) from those with domestic ownership (Doeringer et al. 1998, Freeman et al. 2008, Walsh 2001).<sup>6</sup> Most importantly for our context, the personnel policy of multinational enterprises may be characterized by greater use of performance management and variable pay. The existence of multinational enterprises is often explained by their superior products or production processes to which other firms have no access (Helpman 2006, Markusen 1995). Performance management and pay policies may be one source of this advantage and, even when not, the unique products and production processes of the multinational may be a source of competitive advantage only if the managers and employees of their subsidiaries undertake complementary efforts and human capital investments. Performance management and variable pay provide corresponding incentives. These policies may be seen by the multinational as specifically important to the extent diverse workforces and diverse environments in the various host countries make coordination and agency problems in their subsidiaries more severe.

Very few broad statistical studies exist on foreign ownership and variable pay. Bloom and Van Reenen (2010) provide international evidence that subsidiaries of multinational firms tend to rely more extensively on performance management practices than their domestically owned counterparts. Poutsma et al. (2006) show that across European countries, subsidiaries of foreign multinational companies are, indeed, more likely to use individual performance pay than are domestic companies. Interestingly, they find that establishments in Germany make less use of variable pay than those in other

European countries. Nonetheless, they find that it is establishments with foreign ownership within Germany that are increasing their use of variable pay schemes. Bellmann and Moeller (2010) show that within Germany foreign ownership is associated with an increased use of profit sharing. While these findings suggest a difference in variable pay use by ownership status, they do not indicate whether or not ownership status has an influence on the role works councils play in the use of variable pay.

On the one hand, establishments that have foreign ownership may need works councils to generate the trust and cooperation necessary for successful implementation of variable pay as do establishments with domestic ownership. In this view, if the local subsidiary moves unilaterally to adopt the variable pay practices of its parent company, it risks creating uncertainty and resistance among employees. Without meaningful works council involvement, employees could fear that the foreign parent company will not behave in accordance with its commitments or that it will take excessive advantage of the local establishment. Critically, workers may feel they cannot determine the fairness of the practices. Thus, to discourage workers from withholding effort and cooperation, the foreign owned establishment involves the works council as do many establishments with domestic ownership.

On the other hand, the concept of institutional duality (Kostova and Roth 2002) suggests that the parent company's managers may prefer to unilaterally implement unified pay policies that follow company-wide standards. Thus, Almond et al. (2006) argue that of all personnel policies that US owned firms may wish to harmonize across countries, they exert the most pressure to create broadly common pay policies. These typically include systems of performance management and variable pay. Temple et al.

(2006) claim that German local management faces more intense pressure from US headquarters than do their counterparts in other countries. In response to this pressure, the local management may take independent actions to implement the corporate wide pay policies. In the German subsidiaries they study, Temple et al, (2006) found that each subsidiary successfully undertook actions attempting to free themselves from representative worker organizations that placed restrictions on their autonomy. These actions can be crucial for unilaterally implementing pay policies and are among those catalogued earlier by Ferner and Edwards (1995) and Royle (1998): co-opting works councils, manipulating formal provisions governing works councils, bypass strategies, seeking independent agreements and moving within the vast German bargaining structure to gain advantage. Such actions may be even more likely if headquarters management has little experience with codetermination causing them to view works councils simply as an obstacle. The headquarters then may use "coercive comparisons" and claims of best practices to pit plants in different countries against each other in an effort to diffuse common pay policies (Ferner and Edwards 1995).<sup>7</sup>

Equally important, both management and workers of foreign owned subsidiaries may see works councils as less capable of generating trust and cooperation. Recent research by Jirjahn et al. (2011) shows that cooperation between works councils and management improves with the age of the relationship. Hence, to the extent establishments with foreign ownership have shorter relationships, cooperation between council and management in the adoption and use of variable pay is less likely. Moreover, the works council's power to influence decisions and to protect workers' interests is weakened to the extent that a firm with foreign ownership can more easily threaten to

transfer production or work abroad.<sup>8</sup> Again, headquarters may engage plants in different countries in a sophisticated contest based on implementing specific personnel policies and meeting targets. Only the "winners" can anticipate future investments and continued production (see Ferner and Edwards 1995 and Boganno et al. 2005). Moreover, as important managerial decisions are made overseas and the council of the local subsidiary has only limited access to information possessed by the parent company's managers, establishment-level codetermination becomes less effective in reducing information asymmetries. As an example, Martinez Lucio and Weston (1994) describe a US company exploiting the lack of information among workers at a Belgian plant and at a German plant. Workers were told that future investment depended on changes in working practices. They did not know that the decision to invest in the Belgium plant had already been made. Finally, the headquarters management may lack sufficient information about local conditions of the establishment. As a consequence, even if the works council and local management find solutions in adjusting variable pay schemes to the specific circumstances, it may be difficult to convince the managers of the head office. Works councils facing an establishment with foreign ownership are thus likely to have more difficulty mitigating the employer's commitment problem and creating binding commitments that workers will support.

This line of logic suggests that councils may view variable pay as more of a threat when initiated by an establishment with foreign ownership. As the council has incomplete influence on design and implementation, it may fear that increased wage dispersion and individualization of earnings will reduce its remaining bargaining strength by undermining cohesion and solidarity among workers. Evidence from Canada

and England indicates that variable pay can negatively influence workers' desire for representation specifically when there is little cooperation between the employer and the worker organization (Godard 2009). Blasi and Kruse (1991: pp. 221–227) provide case study evidence showing that some employers in the U.S. adopt employee share ownership along with an investor culture. This culture aims at changing workers' attitudes. While workers may come to perceive themselves as co-owners, management views them as passive (so-called patient) investors who must not challenge hierarchy or management decisions. Against this background, works councils are likely to refuse to actively support foreign owners in implementing variable pay schemes. They even may use their remaining bargaining power to resist the implementation.

In sum, while managements in German establishments with foreign ownership feel pressure to adopt standardized international pay policies that include appraisal and variable pay, the ability of the works council to shape that policy is more limited in these establishments. Thus, returning to the core concept of institutional duality, we hypothesize that pressure to follow company-wide policy may be greater than the pressure to conform to home country practices. As a consequence, the role of works councils in determining the use of variable pay will differ between foreign owned and domestically owned establishments. While the trust-building and enforcement role of works councils should continue to foster the use of variable pay schemes in domestically owned establishments, this influence of works councils should attenuate or vanish in foreign owned establishments. In the extreme, the role of works councils may be reversed in foreign owned establishments. We now describe our testing of this hypothesis.

### **3. Data and Variables**

#### *3.1 The Data Set*

We draw data from the IAB Establishment Panel of the Institute for Employment Research. 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 and they contract 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. 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. We take data from the 2007 wave because of its unique combination of indicators on performance appraisal, profit sharing and share ownership and its unusually extensive relevant establishment characteristics. For our analysis we focus on privately owned commercial establishments. We exclude establishments with dispersed ownership. This allows us to compare establishments under dominant foreign ownership with establishments under dominant domestic ownership.<sup>9</sup> Furthermore, as the WCA only applies to establishments with at least five employees, the analysis is restricted to establishments that meet this minimum size. Additional details on the survey methodology can be found in Fischer et al. (2009).



### *3.2 Key Variables*

Studies on variable pay often consider only a single type of payment scheme or combine different types in a single indicator. Our data allow differentiating between three variables capturing different aspects of incentive schemes: performance appraisal, profit sharing, and employee share ownership. While the second and third are explicit types of variable pay, the first is a requirement for the individualization of pay through performance pay or incentive payments. The establishment's use of these three variable pay aspects is captured by dummy variables. Table 1 provides variable definitions and descriptive statistics.<sup>10</sup> In the sample 53 percent of establishments conduct written performance evaluations of employees, 31 percent have a profit sharing plan for employees and 6 percent provide employee share ownership.

We recognize that using these indicator variables as dependent variables fails to inform at least three aspects of the underlying policies. First, they do not reveal the share of workers who receive the variable pay or are subject to appraisal. Second, they do not reveal the extent of earnings that derives from any of the policies. Third, they provide no information on the design of the respective scheme.<sup>11</sup> We share these limitations with many other studies (see Heywood and Jirjahn 2002, Brown and Heywood 2005, Addison and Belfield 2008 among others). Yet, as each of the personnel policies entail substantial set-up and fixed costs, their adoption represents a meaningful variable for analysis. In each case, there has been a calculus that the benefits from the policy exceed the costs and exploring the determinants of this decision is worthy of inquiry. Nonetheless, we recognize that some of our critical variables might have different influences on the intensity of the schemes or on scope of adoption than they do on adoption itself. As the

dependent variables are dichotomous, our estimates fit cumulative normal distributions using the probit procedure. Thus, the critical estimates present the influences of changes in the independent variables on the probability of the establishment using the respective incentive scheme.

The first key explanatory variable is an indicator for the presence of a works council. Works councils are present in 53 percent of the establishments. The second key variable is an indicator for the presence of a dominant foreign owner (11 percent of establishments). The reference category comprises establishments with dominant domestic ownership indicators.<sup>12</sup>

While foreign ownership may be critical for all the reasons emphasized in section 2, we recognize that there may be variation by the home country of foreign. For example, US firms, and perhaps UK firms, may be more aggressive in seeking common policies on pay for their subsidiaries in Germany and may be more willing to risk conflict with local institutions (Almond et al. 2006). Unfortunately, the IAB data do not have the country of dominant ownership only whether or not it is foreign. Thus, we must leave an examination of home country influences for future research with alternative data.

### *3.3 Control Variables*

The data set provides an unusually rich set of control variables that help isolate the effects of works councils and foreign ownership. Descriptive statistics by Kurdelbusch (2002) indicate that firms with a high percentage of foreign sales are more likely to use variable pay. Hence, we include the share of establishment sales generated by exports. As the variable on the share of exports has a larger number of missing values, both estimates

with and without this variable are provided.

We also control for the use of 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, they may provide channels for improved communication and information sharing between management and employees. They are far less powerful than works councils. Nonetheless Addison et al. (2000) speculate that, in the absence of a council, they may take on a role similar to a works council. Thus, we control for the influence of alternative forms of worker representation on the use of variable pay.

Establishment-level codetermination is part of a broader industrial relations system which involves worker representation through unions. A dummy for the coverage by a collective bargaining agreement captures this broader industrial relations environment. Employers are covered by a collective agreement if they are members of an employers' association. Collective agreements regulate wage rates and general aspects of the employment contracts such as working hours. They can also contain more or less detailed regulations concerning the design of individual based variable pay such as piece rates or performance appraisal (Bispinck 2000). The consequences of collective bargaining coverage for the use of variable pay schemes are ambiguous (Jirjahn 2002). On the one hand, collective agreements may limit the establishment's flexibility and, hence, may reduce the employer's incentive to use variable pay (Franz et al. 2000). On the other hand, collective agreements define only minimum standards. Employers are free to pay wages or to improve working conditions above the level specified by the

agreements. Moreover, the standards defined in a collective agreement may provide clear guidance for designing variable pay schemes and, thus, reduce the employer's uncertainty as to how to implement these schemes.

As emphasized, each of our variable pay measures is likely to be used when workers perform complex and multi-faceted tasks that cannot be captured by a simple piece rate. Thus, we include a series of indicators for the nature of production. These capture the vintage of production technology, investment in information and computer technology, and the presence of research and development to account for technological change. Organizational change is captured by variables for the introduction of self-managed teams, the delegation of decisions to lower levels of hierarchy, and the reorganization of departments and jobs within the last two years. Moreover, variables for employer provided further training and the share of university graduates and skilled employees are included. In sum, these variables help control for worker quality, organization heterogeneity and the nature of change in the organization.

Performance appraisal is often used to provide contemporaneous incentives (Brown and Heywood 2005). Similarly, profit sharing in Germany is usually a contemporaneous payment whereas employee share ownership provides rather long-term incentives (Heywood et al. 2010). Thus, specifically performance appraisal and profit sharing may provide incentives for workers with shorter expected tenure who are less motivated by deferred compensation (Goldin 1986). This suggests that establishments with high personnel turnover should be more likely to implement performance appraisal systems and profit sharing but not employee share ownership. We use the churning rate as a measure of personnel turnover. The churning rate is designed to capture the share of

worker flows that is not part of growth or decline in the size of the establishment workforce and it varies from zero to one. Furthermore, the share of women workers, the share of part time workers, the share of temporary workers and the use of temporary agency work are controlled for. On the one hand, these variables may also be seen as indicating a low expected tenure of the workforce and an increased need to use contemporaneous incentives. On the other hand, they may indicate a high share of peripheral workers who protect a core group of workers with greater tenure and deferred compensation (Drago and Heywood 1995). This may result in a reduced use of contemporaneous pay schemes.

We also control for establishment size to capture returns to scale. Implementing variable pay schemes may involve a fixed cost, and the fixed cost per employee diminishes with the number of employees subject to the pay scheme (Brown and Medoff 1989, Kruse 1996). This, in turn, may increase the net benefits of the scheme. Finally, we control for industry, legal form, age of the establishment, and a location in East Germany.

## 4. Results

### *4.1 Performance Appraisal*

Column 1 of Table 2 presents the initial results for performance appraisal. Many of the controls take statistically significant coefficients of the expected sign. The estimates confirm that complex and multi-faceted tasks are associated with the use of performance appraisal systems. Reorganization of work, self-managed teams, research and development, and up-to-date production technology are positive determinants. Employer provided further training is also positively associated with the use of performance

appraisal. Furthermore, establishments with larger shares of women, making use of temporary help agencies and having greater personnel turnover are more likely to use appraisal. Establishment size increases the probability of performance appraisal, but at a decreasing rate. The location and the legal form of the establishment play a role, too. Establishments in the former East Germany are more likely to use appraisal all else equal. This may reflect pressures for change associated with wide scale privatization. The legal forms of limited liability and stock corporations are associated with greater use of performance appraisal.

Turning to the variables for industrial relations, collective bargaining coverage is associated with a higher probability of using performance appraisal while alternative worker representation implemented voluntarily by the employer plays no statistically significant role. Most importantly, works councils emerge as a critical predictor of the use of performance appraisal. The presence of a works council is associated with an increase in the likelihood of appraisal. This fits with the hypothesis that worker involvement can make appraisal schemes more palatable to workers as the context and use of the appraisals can be examined and jointly determined and reviewed.

Those establishments that are foreign owned are also more likely to use performance appraisal systems, all else equal. This fits past survey and case study evidence and supports the view that multinationals may have standard practices on performance appraisal that they bring to their German operations. They may view these as critical for comparing across plants and they may be more familiar with such practices from their home countries.

We now search for evidence of institutional duality by examining the interaction

between foreign ownership and the presence of a works council. This is presented in column 2. The inclusion of the interaction variable does not change the general pattern of results but does influence the coefficient on the works council incidence, a modest increase, and on foreign ownership, a large increase. The interaction itself is very large and negative. The critical point is that the size of the coefficient is actually slightly larger in magnitude than the positive coefficient on the works council variable itself. As a consequence, the presence of a works council in a foreign owned establishment has no influence on performance appraisal use. The net coefficient is slightly negative but not significantly different from zero. This is not a function of using the interaction specification. We estimated a separate but otherwise identical specification limited to only establishments with foreign ownership confirming that the coefficient on works councils is insignificant. In the subsample limited to domestic ownership, the coefficient on work councils remained large and statistically significant.

Thus, the presence of a works council is associated with a greater likelihood of performance appraisal among domestically owned establishments but with no influence on appraisal among foreign owned establishments. This obliquely supports the notion that domestic establishments are able to work with councils to improve performance while foreign owned establishments are more unilateral. In the Appendix Table A1, we use the estimates to predict the probability of the use of performance appraisal. In domestically owned establishments, the presence of a works council is associated with a 15 percentage point higher probability of performance appraisal. Given that the mean of appraisal is 53 percent, this is a substantial influence.

Again, we are emphasizing the role of the works council among foreign owned

firms not making a statement about the role of foreign ownership itself. Foreign ownership is associated with an increase in the likelihood of using appraisals. However, the size of that increase depends on the presence of a works council. Among establishments without works councils, foreign ownership is associated with a much larger increase in the likelihood of using appraisals than it is among establishments with works councils. As Table A1 shows, the increase amounts to almost 30 percentage points in establishments without works councils and it is only 7 percentage points in establishments with works councils. This reflects institutional duality with the presence of a works council generating friction against unilateral implementation performance appraisal by managers of firms with foreign ownership.

Finally, to account for general exposure to international markets, we include a variable measuring the share of sales that are exported from Germany for each establishment. As this information is missing for some establishments, the sample size is smaller. The new estimate is shown in column 3 and largely reproduces what was shown in column 2. The new measure of exports is positively associated with the likelihood of performance appraisal supporting the notion that exposure to international markets is associated with using appraisals. Critically, the role for works councils is unchanged and its relationship with foreign ownership also remains unchanged.

#### *4.2 Profit Sharing*

In Table 3 we replicate the same series of estimates using the presence of profit sharing for employees as the dependent variable. The critical point is that the basic pattern of results for our variables of interest is repeated. Foreign owned establishments are more



likely to use profit sharing. Works councils also appear to be associated with greater use of profit sharing but that result is completely unique to the sample of domestically owned establishments. They again appear to play no positive role among the foreign owned firms. Indeed, the negative interaction is so large that it hints that works councils play a negative role among foreign owned firms. Adding the export share does nothing to change this pattern and takes an insignificant coefficient itself.

The pattern of control variables confirms a role of multiskilling and multitasking in the use of profit sharing. The share of university graduates, employer provided further training, reorganization of work, delegation of decisions, up-to-date production technology, research and development, and investment in information and computer technology are all positive covariates of profit sharing. Furthermore, establishment size, high personnel turnover, the use of agency workers, and the legal forms of limited liability and stock corporations are positively associated with profit sharing. Compared to performance appraisal estimates, collective bargaining coverage and alternative forms of worker representation take reversed roles. Collective bargaining coverage does not take a statistically significant coefficient. This may reflect unions' skepticism about profit sharing and, hence, the typical absence of guiding rules of implementation in collective bargaining agreements. By contrast, the incidence of alternative forms of worker representation emerges as a positive covariate of profit sharing use.

While these patterns are interesting, our central point continues to be that domestic firms appear to work with works councils to create profit sharing but foreign firms seemingly implement profit sharing without this cooperation. In turn, this suggests that institutional duality by foreign firms creates incomplete adaption and potential

resistance to local industrial relations institutions. Again, Table A1 confirms that the magnitudes are economically interesting. The net influence of the works council on the likelihood of profit sharing is roughly 7 percentage points among domestically owned firms and about -6 percentage points among foreign owned firms. Indeed, the magnitudes are such that among firms that have works councils, there is very little influence of foreign ownership.

#### *4.3 Employee Share Ownership*

Table 4 again reproduces the series of three estimates using share ownership as the dependent variable. For a third time, the basic pattern is repeated and may be even the more dramatic. Firms with foreign ownership continue to be more likely to have share ownership schemes. Domestically owned establishments with works councils are also more likely to have share ownership schemes. The interaction is very large and negative. Thus, works councils have a positive role that is unique to sample of domestic firms. In these estimations, the interaction coefficient is large and negative enough that absent the interaction variable, a significant influence of foreign ownership cannot be identified. The addition of the variable for export share changes nothing in these estimates.

The projections in Table A1 show that among domestically owned firms without works councils there are virtually no share ownership plans (only about 1 percent) while among foreign owned firms without works councils the figure reaches a high of over 10 percent. As in the two previous projections, the presence of a works council is reflected in an increase in the probability among domestically owned firms but not among foreign owned firms.

The results on the control variables show a strong role of the qualification of the workforce. Employer provided further training, the share of university graduates, and the share of skilled workers (with completed apprenticeship training) are positive determinants of employee share ownership. While the variables for organizational change do not take significant coefficients, two indicators of technological change, the state-of-the-art technology and investment in information and communication technology, are positively associated with the provision of employee share ownership. Establishment size and the legal form of a stock corporation also increase the likelihood of employee share ownership. Confirming the pattern for the use of profit sharing, collective bargaining coverage has no significant influence while the use of alternative forms of worker representation is a positive covariate of share ownership.

#### *4.4 Robustness Checks*

In summary, we identify a common pattern for all three HRM practices associated with variable pay that fits our basic hypothesis. While works councils are associated with increasing the likelihood of each practice, this is a role unique to domestically owned firms. Among foreign owned firms, the practices are more likely but the works council plays, at best, no role. This appears consistent with the notion that foreign firms behave in a more unilateral fashion with incomplete adaptation to local institutions.

In this section, we provide important robustness checks that increase confidence in the pattern of determinants identified for the three HRM practices. Increased international competition is often viewed as a challenge to Germany's system of industrial relations (Doellgast and Greer 2007). Against this background, we explore the issue of whether the

role identified for works councils is uniquely associated with foreign ownership or is more broadly associated with establishments engaged in the global economy. Greater international exposure by German firms may bring the ability to threaten moving work overseas and that this may change the employer's relation with the works council. In addition, exposure overseas could bring alternative views of managerial roles. Thus, in addition to the interaction of works councils with foreign ownership we add an interaction of works councils with the establishment's export share. This allows us to investigate the role of at least one dimension of increased international exposure in more detail and to see whether our hypotheses about foreign ownership retain support.

We summarize the estimates for all three practices in Table 5. The new interaction presents a mixed picture. It emerges with an insignificant coefficient in the performance appraisal estimate but shows a significantly positive coefficient in the regression of profit sharing and a significantly negative coefficient in the regression of employee share ownership. Critically, the pattern demonstrated earlier remains. The practices are more common among firms with foreign ownership. They are also more common among firms with works councils but this role of works councils is unique to domestically owned establishments. The presence of a works council among foreign owned firms is not associated with any greater likelihood of the practices. Thus, foreign ownership remains a critical determinant of the role of works councils and continues to suggest the importance of institutional duality.

As a second robustness examination, we return to the original estimates and examine the role of alternative forms of worker representation in more detail. We investigate if the role of foreign ownership is unique in its interaction with works councils or if it applies

more broadly across other types of representation. Thus, in addition to the interaction of foreign ownership with works councils we add an interaction of foreign ownership with the presence of alternative forms of worker representation. Again, at issue is whether the new interactions emerge as important and whether the interactions with works councils remain.

The estimations for the three practices are summarized in Table 6. The new interactions are routinely positive but none achieve statistical significance. The interactions with works councils remain negative and significant. Thus, the pattern remains. Foreign owned establishments are more likely to engage in each practice. Domestically owned establishments that have works councils are more likely to engage in the practices but this role for works councils does not carry over to foreign establishments. Our robustness checks continue to make clear there is no positive role played by works councils among foreign owned establishments.

We also experimented with an interaction term of works councils and establishment size. Works councils are more likely to be present in larger establishments. This may suggest that the effect of works councils depends on the size of the establishment. The exercise provided mixed results. While the interaction term played no significant role in the profit sharing regression, it took a significantly negative coefficient in the performance appraisal regression and a significantly positive coefficient in the share ownership regression. Nonetheless the crucial point is that our pattern of key results remained robust even when including the additional interaction term.

Finally, we examined an interaction term of works council incidence and collective bargaining coverage. Previous studies for the 1990s found a strong positive influence of

works councils on variable pay in establishments covered by collective bargaining agreements (Heywood et al. 1998, Heywood and Jirjahn 2002). This finding conforms to the notion that works councils in covered firms specialize more on their productive role while distributional issues are moderated by unions (Freeman and Lazear 1995). Our results for the year 2007 were mixed. The interaction term on works councils and collective bargaining played no significant role in the profit sharing regression while it took a significantly negative coefficient in the performance appraisal regression and a significantly positive coefficient in the share ownership regression. One possible reason for these mixed results is that recent collective agreements increasingly provide opening clauses. These clauses mean that councils in covered establishments are more likely to be involved in wage negotiations (Ellguth et al. 2012) and so cannot fully specialize on their productive role. Nonetheless, the important point is again that even this robustness check does not change the crucial pattern of our key results.

## 5. Conclusions

This paper examines whether or not the role of works councils appears to differ in domestically and foreign owned establishments. Appraisal and variable pay are increasingly important aspects of multinational HRM practices and we have hypothesized that the patterns of their use may reflect institutional duality in which firms with foreign ownership interact differently with works councils than domestically owned firms. Earlier work has argued that works councils provide a mechanism for detailed worker participation and that councils have the potential to help build the trust (and enforcement) needed to adopt or modify HRM practices in general and variable pay practices in

particular. Yet, institutional duality implies that this role of works councils may not carry over to foreign owned establishments.

Examining the determinants of performance appraisal, profit sharing and employee share ownership, the estimates provide broad support for this hypothesis. Foreign owned establishments are more likely to use the three HRM practices but appear to do so in a more unilateral fashion. While works councils are associated with an increased likelihood of the practices, this is only true among domestically owned establishments but not among foreign owned establishments. This suggests profound differences in the role of works councils in the two subsamples and fits with the view that increased foreign direct investment serves to alter traditional industrial relations institutions.

While global competition has been recognized to place pressure on the institutions of German employment relations, we confirm the specific role of foreign firms locating subsidiaries in Germany. Our evidence that these subsidiaries are more willing to act unilaterally on matters usually reserved for codetermination indicates a move away from the traditional German model. It also seems indicative of movement toward a model of managerial independence often associated with the United States. Globalization is often viewed as a challenge to rigid labor market institutions which impede economic performance. Yet, our results suggest that foreign ownership undermines the functioning of an institution that can contribute to economic performance by building trust and cooperation.

We recognize the need for continued research within the theme. Future research might fruitfully examine the dynamics of the interaction between foreign ownership and

establishment-level codetermination. Recent research by Jirjahn et al. (2011) shows that cooperation between works councils and management improves with the age of the relationship and that firms with foreign ownership are likely to have shorter relationships. Thus, it would be interesting to examine whether or not the evidence of institutional duality diminishes as both parties accumulate experience with each other.

In addition, future work might examine whether the evidence of institutional duality differs by the home country of the foreign owner. Subsidiaries of US corporations may be less willing to adapt to the local institution of German works councils than subsidiaries of corporations from elsewhere in Europe which may have their own versions of works councils. Finally, the duality we identify may be more pronounced in some sectors or industries than in others arguing for separate examinations of specific industries and sectors.



Table 1: Variable Definitions and Descriptive Statistics (2007 IAB Sample)

Variable	Description (mean, standard deviation)
Performance Appraisal	Dummy equals 1 if the establishment conducts written performance evaluations of employees (.533, .499)
Profit Sharing	Dummy equals 1 if the firm provides profit sharing for employees (.314, .464)
Employee Share Ownership	Dummy equals 1 if the firm provides share ownership for employees (.060, .237)
Works Council	Dummy equals 1 if the establishment has a works council (.529, .499)
Foreign Ownership	Dummy equals 1 if the establishment has a dominant foreign owner (.111, .315)
Collective Bargaining	Dummy equals 1 if the establishment is covered by a collective bargaining agreement (.596, .491)
Other Representation	Dummy equals 1 if management has implemented alternative forms of worker representation such as staff spokesmen, round tables or worker committees (.114, .317)
Export Share	The share of establishment sales accounted for by exports in percent (14.17, 24.73)
Technology	An ordered variable for the vintage of technology where 1 = very old...5 = state of the art (3.91, .736)
R&D	Dummy equals 1 if the establishment engages in research and development (.248, .432)
Computer	Dummy equals 1 if the establishment invested in information and computer technology within the last year (.698, .459)
Training	Dummy equals 1 if the establishment provides further training to workers (.843, .364)
Reorganization	Dummy equals 1 if the establishment has reorganized departments and jobs within the last two years (.359, .480)
Delegation	Dummy equals 1 if decisions have been delegated to lower tiers of the establishment hierarchy within the last two years (.212, .409)
Teams	Dummy equals 1 if self-managed teams have been introduced within the last two years (.123, .329)
Women	The share of the establishment's workforce that is female (.418, .282)
Part time	The share of the establishment's workforce that is part time (.205, .235)
Churning	A churning rate based on the first half of 2007. $H$ = number of hires and $S$ = number of separations. The rate is equal to $1 - (H-S)/(H+S)^2$ if $H + S > 0$ and equal to 0 if $H+S = 0$ (.556, .428)
Temporary	The share of the establishment's workforce that is on temporary contract (.119, .157)
Agency	Dummy equals 1 if the establishment uses agency workers (.335, .472)
Size	Number of employees at the establishment (295, 1073)

Skilled	The share of the workforce with completed apprenticeship training (.601, .256)
University	The share of the workforce with university degrees (.106, .168)
Limited	Dummy equals 1 if the establishment is a private limited company (.723, .447)
Stock Corporation	Dummy equals 1 if the establishment is a stock corporation (.063, .244)
Age 1990	Dummy equals 1 if the establishment was founded in the 1990s (.294, .456)
Age 2000	Dummy equals 1 if the establishment was founded 2000 or later (.137, .344)
East	Dummy equals 1 if the establishment is located in the former East Germany (.319, .466)
Industrial Dummies	8 are included

N= 3575

Questionnaire: [http://doku.iab.de/fdz/iabb/fb\\_2007\\_e.pdf](http://doku.iab.de/fdz/iabb/fb_2007_e.pdf)

Table 2: The Likelihood of Formal Performance Appraisal (Probit estimation)

	1	2	3
Constant	-1.553 (8.71)**	-1.564 (8.75)**	-1.472 (7.62)**
Foreign Ownership	.2940 (3.78)**	.5301 (3.55)**	.5280 (3.45)**
Works Council	.2952 (5.26)**	.3145 (5.47)**	.3233 (5.16)**
Foreign Ownership X Works Council		-.3052 (1.77)*	-.3460 (1.95)*
Export Share			.0033 (2.68)**
Other Representation	.0678 (0.96)	.0682 (0.96)	.0398 (0.51)
Collective Bargaining	.0998 (1.97)**	.1027 (2.03)**	.1269 (2.32)**
Training	.6104 (8.91)**	.6145 (8.94)**	.6167 (8.61)**
University	-.0004 (0.01)	-.0067 (0.04)	.1495 (0.82)
Skilled	-.0522 (0.53)	-.0449 (0.46)	-.1405 (1.33)
Size	.0002 (2.22)**	.0002 (2.24)**	.0002 (1.86)*
Size Squared	-4.9x10 <sup>-9</sup> (2.27)**	-4.9x10 <sup>-9</sup> (2.29)**	-4.5x10 <sup>-9</sup> (1.94)*
Women	.2788 (2.37)**	.2761 (2.35)**	.1771 (1.41)
Churning	.0957 (1.75)*	.0921 (1.68)*	.0610 (1.03)
Temporary	.1989 (1.26)	.2038 (1.29)	.2512 (1.44)
Agency	.2011 (3.50)**	.2022 (3.52)**	.2094 (3.46)**
Part time	-.1937 (1.51)	-.1915 (1.48)	-.2117 (1.49)
Reorganization	.1355 (2.63)**	.1335 (2.59)**	.1658 (2.99)**
Delegation	.0822 (1.37)	.0840 (1.40)	.0929 (1.43)
Teams	.2160 (2.93)**	.2148 (2.91)**	.1763 (2.19)**
Technology	.0832 (2.68)**	.0822 (2.65)**	.0927 (2.76)**

R&D	.1366 (2.12)**	.1359 (2.11)**	.0569 (0.81)
Computer	.0447 (0.86)	.0443 (0.85)	.0098 (0.17)
Limited Liability	.1638 (2.60)**	.1604 (2.54)**	.1437 (2.00)**
Stock Corporation	.4182 (3.56)**	.4146 (3.54)**	.5794 (4.34)**
Age 1990	.0800 (1.33)	.0786 (1.30)	.0827 (1.28)
Age 2000	-.0151 (0.21)	-.0164 (0.23)	-.0161 (0.21)
East	.2012 (3.50)**	.2037 (3.54)**	.2170 (3.47)**
Industrial Dummies	Yes	Yes	YES
Pseudo R-squared	.1225	.1231	.1308
N	3575	3575	3070

Notes: Robust z-statistics are in parentheses.

\*Statistically significant at ten percent.

\*\*Statistically significant at five percent.

Table 3: The Likelihood of Profit Sharing (Probit estimation)

	1	2	3
Constant	-2.399 (11.87)**	-2.421 (11.91)**	-2.185 (10.16)**
Foreign Ownership	.1721 (2.29)**	.4681 (2.94)**	.4437 (2.74)**
Works Council	.1785 (3.03)**	.2083 (3.44)**	.2145 (3.32)**
Foreign Ownership X Works Council		-.3775 (2.12)**	-.3819 (2.08)**
Export Share			.0009 (0.73)
Other Representation	.1338 (1.69)*	.1336 (1.69)*	.2056 (2.50)**
Collective Bargaining	-.0638 (1.17)	-.0601 (1.10)	-.0535 (0.93)
Training	.4147 (5.19)**	.4220 (5.28)**	.4438 (5.43)**
University	.3578 (2.26)**	.3491 (2.19)**	.5813 (3.21)**
Skilled	.0901 (0.85)	.1004 (0.95)	.1108 (1.00)
Size	.0002 (3.19)**	.0002 (3.23)**	.0002 (3.50)**
Size Squared	-3.2x10 <sup>-9</sup> (2.44)**	-3.3x10 <sup>-9</sup> (2.47)**	-4.9x10 <sup>-9</sup> (3.12)**
Women	-.1963 (1.52)	-.1993 (1.54)	-.3026 (2.23)**
Churning	.1752 (3.00)**	.1709 (2.92)**	.1898 (3.07)**
Temporary	.1641 (0.94)	.1724 (0.98)	.2977 (1.60)
Agency	.1295 (2.25)**	.1299 (2.25)**	.1309 (2.12)**
Part time	-.1291 (0.86)	-.1271 (0.85)	-.0799 (0.50)
Reorganization	.1306 (2.47)**	.1276 (2.41)**	.0882 (1.56)
Delegation	.1814 (2.88)**	.1844 (2.92)**	.2454 (3.68)**
Teams	-.1111 (1.43)	-.1137 (1.46)	-.1180 (1.42)
Technology	.0628 (1.92)*	.0617 (1.88)*	.0528 (1.52)

R&D	.1719 (2.70)**	.1689 (2.65)**	.1595 (2.30)**
Computer	.2867 (4.96)**	.2870 (4.97)**	.2603 (4.25)**
Limited Liability	.3743 (5.11)**	.3697 (5.03)**	.2878 (3.48)**
Stock Corporation	.7471 (6.38)**	.7418 (6.34)**	.7371 (5.55)**
Age 1990	.0581 (0.88)	.0600 (0.85)	.0597 (0.87)
Age 2000	.0623 (0.83)	.0611 (0.81)	.0482 (0.61)
East	-.0480 (0.76)	-.0449 (0.71)	-.0467 (0.69)
Industrial Dummies	Yes	Yes	Yes
Pseudo R-squared	.1435	.1446	.1308
N	3590	3590	3083

Notes: Robust z-statistics are in parentheses.

\*Statistically significant at ten percent.

\*\*Statistically significant at five percent.

Table 4: The Likelihood of Employee Share Ownership (Probit estimation)

	1	2	3
Constant	-3.616 (10.49)**	-3.658 (10.44)**	-3.473 (9.31)**
Foreign Ownership	.1180 (1.11)	.5309 (2.36)**	.5568 (2.48)**
Works Council	.3938 (4.39)**	.4454 (4.84)**	.4321 (4.42)**
Foreign Ownership X Works Council		-.5026 (2.02)**	-.5145 (2.05)**
Export Share			.00005 (0.02)
Other Representation	.2101 (1.85)*	.2073 (1.82)*	.2556 (2.15)**
Collective Bargaining	.0018 (0.02)	.0058 (0.07)	.0329 (0.38)
Training	.2636 (1.90)*	.2731 (1.96)*	.2385 (1.69)*
University	.4139 (1.65)*	.3936 (1.57)	.4035 (1.55)
Skilled	.4117 (2.34)**	.4166 (2.36)**	.3679 (2.02)**
Size	.0002 (4.18)**	.0002 (4.25)**	.0002 (2.89)**
Size Squared	-4.6x10 <sup>-9</sup> (3.98)**	-4.7x10 <sup>-9</sup> (4.10)**	-1.2x10 <sup>-9</sup> (1.47)
Women	.3492 (1.80)*	.3498 (1.79)*	.2654 (1.28)
Churning	.0510 (0.56)	.0437 (0.48)	.0650 (0.68)
Temporary	-.0829 (0.25)	-.0679 (0.21)	-.1934 (0.59)
Agency	-.0234 (0.28)	-.0272 (0.33)	-.0228 (0.25)
Part time	-.3963 (1.53)	-.3998 (1.15)	-.2032 (0.77)
Reorganization	.0894 (1.13)	.0835 (1.05)	.0905 (1.08)
Delegation	.0082 (0.09)	.0075 (0.08)	.0409 (0.41)
Teams	-.0605 (0.52)	-.0653 (0.56)	-.0502 (0.40)
Technology	.1067 (2.16)**	.1068 (2.15)**	.0977 (1.83)*

R&D	-.0633 (0.68)	-.0674 (0.73)	-.0663 (0.66)
Computer	.1551 (1.64)	.1573 (1.66)*	.1491 (1.47)
Limited Liability	.0426 (0.37)	.0336 (0.29)	.0329 (0.25)
Stock Corporation	.7324 (4.96)**	.7223 (4.89)**	.7796 (4.71)**
Age 1990	-.0091 (0.09)	-.0153 (0.14)	-.0270 (0.24)
Age 2000	.1179 (1.03)	.1100 (0.96)	.1418 (1.19)
East	.0879 (0.89)	.0955 (0.96)	.1336 (1.29)
Industrial Dummies	Yes	Yes	Yes
Pseudo R-squared	.1357	.1381	.1356
N	3588	3588	3077

Notes: Robust z-statistics are in parentheses.

\*Statistically significant at ten percent.

\*\*Statistically significant at five percent.



Table 5: Works Councils, Foreign Ownership and Exports

	1 Performance Appraisal	2 Profit Sharing	3 Share Ownership
Constant	-1.471 (7.62)**	-2.181 (10.14)**	-3.496 (9.35)**
Foreign Ownership	.5348 (3.47)**	.4854 (3.01)**	.4970 (2.11)**
Works Council	.3143 (4.79)**	.1707 (2.49)**	.5003 (4.89)**
Foreign Ownership X Works Council	-.3569 (1.98)**	-.4412 (2.40)**	-.4367 (1.65)*
Export Share	.0027 (1.36)	-.0023 (1.11)	.0050 (1.61)
Export Share X Works Council	.0010 (.042)	.0046 (1.93)*	-.0067 (1.91)*
Other Representation	.04122 (0.53)	.2122 (2.59)**	.2401 (2.04)**
Industrial Dummies	Yes	Yes	Yes
Pseudo R-squared	.1309	.1318	.1381
N	3070	3083	3077

Notes: All estimates include the full set of control variables as shown in Tables 2 – 4.

Robust z-statistics are in parentheses.

\*Statistically significant at ten percent.

\*\*Statistically significant at five percent.

Table 6: Works Councils, Foreign Ownership and Other Forms of Representation

	1 Performance Appraisal	2 Profit Sharing	3 Share Ownership
Constant	-1.472 (7.62)**	-2.181 (10.14)**	-3.467 (9.29)**
Foreign Ownership	.5253 (3.31)**	.3831 (2.30)**	.4637 (2.02)**
Works Council	.3231 (5.15)**	.2109 (3.27)**	.4252 (4.35)**
Foreign Ownership X Works Council	-.3444 (1.92)*	-.3424 (1.85)*	-.4534 (1.81)*
Export Share	.0033 (2.68)**	.0009 (0.75)	.00001 (0.04)
Other Representation	.0385 (0.47)	.1703 (1.98)**	.1969 (1.52)
Foreign Ownership X Other Representation	.0197 (0.07)	.4213 (1.37)	.4324 (1.26)
Industrial Dummies	Yes	Yes	Yes
Pseudo R-squared	.1308	.1314	.1367
N	3070	3083	3077

Notes: All estimates include the full set of control variables as shown in Tables 2 – 4.

Robust z-statistics are in parentheses.

\*Statistically significant at ten percent.

\*\*Statistically significant at five percent.

Appendix

Table A1: Projected Probabilities

	Performance Appraisal	
	No Council	Council
Domestic Owned	.436	.585
Foreign Owned	.733	.652
	Profit Sharing	
Domestic Owned	.264	.340
Foreign Owned	.425	.361
	Employee Share Ownership	
Domestic Owned	.009	.026
Foreign Owned	.104	.089

All values are kept at their means and the four values are computed using the coefficients from the variables on foreign ownership, works councils and the interaction.

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## ENDNOTES

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<sup>1</sup> A handful of econometric studies examine the potential influence of national industrial relations systems on the inflow of FDI (Bognanno et al. 2005, Cooke 1997, Cooke and Noble 1998, Hamm and Kleiner 2007). Other studies investigate the effect of FDI on domestic unionization (Cooke 2001, Dreher and Gaston 2007, Slaughter 2007) and the desire of workers for works councils (Addison et al. 2003, Schmitt 2003). None of these studies examines the interaction of foreign ownership and domestic industrial relations on economic outcomes or HRM practices.

<sup>2</sup> Empirical studies provide evidence of gender and racial bias in performance appraisal (Castilla 2008, Elvira and Town 2001, Maas and Torres-Gonzalez 2011).

<sup>3</sup> One might argue that workers routinely object to individualized incentives as they increase wage dispersion and violate egalitarian fairness norms (Bewley 1999). Yet, Abeler et al. (2010) present contradictory evidence that workers withhold effort when the employer does *not* differentiate wages according to individual performance. Fairness requires rewarding higher performance with higher wages. Workers may view unequal wages as fair as long as the pay determination accords with procedural fairness norms (Dolan et al. 2007, Frey et al. 2004). Workers perceive wage inequality as unfair when pay determination appears arbitrary generating wage differences that do not reflect performance differences. Indeed, Jirjahn and Kraft (2007) provide evidence that the productivity effect of differential rewards is stronger when pay determination is less arbitrary.

<sup>4</sup> This contradicts the notion that councils oppose variable pay as it increases wage inequality and, hence, undermines worker solidarity. While there is indeed a negative link between works councils and intra-establishment wage dispersion (Jirjahn and Kraft 2010), this does not necessarily imply that councils generally oppose variable pay. The available studies suggest that councils support variable pay when they are involved in its implementation and enforcement. In what follows we argue that the extent to which this is true depends on the type of ownership.

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<sup>5</sup> Hart and Hubler (1990) provide evidence that profit sharing in Germany does not substitute for the base wage but adds to it. One might speculate that councils are only open to variable pay when it does not substitute for fixed wages (Kurdelbusch 2002). Nonetheless, the presence of a council has been shown to increase the probability of using variable pay schemes and, indeed, the role of the council in trust-building which increases the effectiveness of the schemes would seem to apply regardless of the extent of substitution between variable and fixed pay.

<sup>6</sup> They also tend to pay higher wages (Andrews et al. 2009) and may engage in rent sharing across borders (Budd and Slaughter 2004, Budd et al. 2005).

<sup>7</sup> More generally Ferner et al. (2006) provide a series of studies on how multinational companies transfer policies, practices and organizational structures across national borders.

<sup>8</sup> While this logic applies most immediately to good producing industries, the ability to also offshore services has increased dramatically with the improvement in telecommunications (Jensen and Kletzer 2006).

<sup>9</sup> Specifically the question is: “Is the establishment mainly or solely in: (a) West German ownership (b) East German ownership (c) Foreign ownership (d) Public ownership (e) No single owner which holds majority?” Our analysis considers only plants under (a)-(c).

<sup>10</sup> The survey design stratifies by establishment size and oversamples larger establishments. We do not use weighted regressions as we account for stratification by including the stratification characteristic (establishment size) as in all estimations (Winship and Radbill 1994). The descriptive statistics are also not weighted to relate them to the multivariate analysis.

<sup>11</sup> There are different forms of profit sharing and employee share ownership in Germany (Carstensen et al. 1995, Matiaske et al. 2009, Perotin and Robinson 2003). Profit sharing schemes may differ in the measure of performance. While in the majority of cases performance is measured by the firm or establishment profit, there are also schemes that are based on revenue, value added or other measures of firm performance. One common feature of most profit sharing

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schemes in Germany is that they provide contemporaneous profit sharing whereas profit sharing in the U.S. is often deferred. Among those firms providing employee share ownership, employee stock ownership and employee stock options are widely used. However, employees can also hold shares in firms which are not publicly traded, a so-called silent partnership. A silent partner has a share in the firm's equity but has no influence on everyday management decisions.

<sup>12</sup> When questionnaires are used to collect data at the same time from the same participants, common method variance (CMV) may be a concern. Yet, this concern is strongest when both the dependent and focal explanatory variables are perceptual measures (Podsakoff and Organ, 1986). We emphasize that this concern seems largely unwarranted in the IAB in which senior officials report on factual matters such as the ownership of the firm and the presence of a works council.