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Institutions, labour management practices, and firm performance in Europe

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Abstract

We develop a theoretical framework to examine three hypotheses on the relationship between LMPs and organisational performance in European firms. The first is that collaborative forms are more strongly associated with superior firm performance than calculative forms. The second is that these associations are strongest where national institutional and normative settings support them. The third is that employer-employee consultative committees and collective payment methods are also associated with superior firm performance. The first two hypothesis are strongly empirically supported, as is the third albeit more weakly. The implications of the findings in the context of the Varieties of Capitalism theory are discussed.

Introduction

In this chapter we test how different institutional environments and associated collaborative types of labour management practices at firm level improve firm performance in European countries.

The European ‘social model’ suggests that the existence of a collaborative approach to companies’ relations with employees has historic political origins (Martens, 1999). In the German case, arguably at the centre of this model, a political consensus that aspects of ‘liberalisation’ are required has long been developing (Lane, 2000; 2003). Equally, at the European level, it has been argued that the European Employment Strategy, now in place for over ten years, threatens to crowd out the EU’s more traditional rights-based approach to employment regulation in the name of job creation (Fredman, 2006). It is therefore important to evaluate the argument that the efficiency benefits of collaborative practices encouraged by rights-based approaches are inextricably linked to the benefits that employees derive from them (Akerlof, 1982). In short, there is a need for an evaluation of the traditional emphasis on employment rights and related supportive institutional structures that constitute the European social model.

Many previous studies have attempted to establish a link between HRM strategies towards labour and profitability, but these have been criticised for omitting employee relations variables (Wright and Haggerty, 2005). We examine two specific types of managerial approaches to employer-employee relations as defined by Gooderham, Nordhaug and Ringdal (1999) to establish how effective each type is in enhancing organisational performance in different national contexts. These two forms - 'collaborative' and 'calculative' HRM - are essentially defined by the degree to which employee involvement and participation are emphasized. The Gooderham et al. (1999) categories are essentially statistical constructs that may conflate or ignore important elements of HRM practice. We therefore augment the analysis of collaborative practices as defined by Gooderham et al. with other indicators that explicitly consider the role of teams and employee consultative committees.

We theoretically elaborate and empirically test the proposition that collaborative practices are more likely to enhance the labour extraction process and firm performance than calculative alternatives. For the empirical analysis we use Cranet. Our examination of European firms supports the proposition that in those countries where the institutional setting is most conducive, collaborative organisational level practices enhance the labour extraction process and lead to superior firm performance. Calculative practices have a weaker impact on the labour extraction function and firm performance.

The chapter is organised as follows. In the following section, we review literature on the link between institutional settings and management strategies towards labour and develop a theoretical framework to analyse relationships in different national institutional environments. We also develop our hypotheses for evaluating relationships between such management practices and institutional settings. We describe the data used and the scaling procedures employed in order to create our measures and we then test our propositions

empirically. We show that resolving the inherent employer-employee conflict of interest by adopting optimal practices at organisational level corresponding to the national institutional setting is efficient and ultimately can be welfare improving and we discuss these results and draw conclusions in the final section of the chapter.

Institutional setting, management strategies towards labour and firm performance

Different national institutional frameworks support different managerial strategies. As noted in Chapter X, the Varieties of Capitalism (VoC) literature has variants, categorising countries and grouping them either by 'Variety' (Hall and Soskice, 2001) or 'business system' (Whitley, 1999). The USA, Britain and Ireland are invariably put into one category ('Liberal Market Economies' [Hall and Soskice, 2001] or 'compartmentalised' [Whitley, 1999]) and those of Western Europe into another ('Co-ordinated Market Economies' [Hall and Soskice, 2001]; 'collaborative' [Whitley, 1999]). The extent to which institutional complementarities within systems help develop high-trust relations at the organisational level is a defining characteristic of national systems (Amable, 2003; Goergen, Chahine, Brewster and Wood, forthcoming; Hall and Soskice, 2001; Whitley, 1999). Whitley (1999) places particular emphasis on the importance of co-operation between employers and employees, as demonstrated in the analytical significance of his 'employer-employee interdependence' concept, described as the degree to which both parties are willing to invest in each other. The implication is that where interdependence is encouraged by the systemic institutional context and is relatively well-developed, this will in turn raise levels of mutual investment and efficiency, productivity and quality. Systemic features in the economies categorised by Whitley (1999) as 'co-operative' serve to support the development of high-trust relations, and the converse is also true for his 'compartmentalised' (broadly equivalent to the 'low trust' or liberal market economies(LME)) category (Harcourt and Wood, 2007).

The formal institution of teamwork by management may both reflect and entail different degrees of delegation and therefore trust to the teams, but the very fact of their institution by management requires a certain minimum level of trust (Tzafrir, 2005). Ackroyd and Thompson (1999) and Tzafrir (2005) show that despite considerable variation, high-trust relations between management and employees are associated with team working and especially with its more autonomous forms. Trust is likely to be further built by collective consultative mechanisms that, again allowing for degrees of variation between them, give employees an opportunity for ‘voice’ (see Chapter X). These mechanisms afford a degree of protection to individuals exercising voice. The collective provides support, encouragement and some protection to individual workers via its capacity to take sanctions against those threatening its members (Brewster et al., 2007). Finally, group payment systems in general also tend to increase workers decision-making latitude and to reinforce employee collectives in relation to management and are therefore viewed negatively by ‘calculative’ forms of management strategies which stress individual rewards for individual effort (Legge, 1995).

Some forms of management strategies emphasise collaboration between employees and employers and others do not (Gooderham et al., 1999). Gooderham et al. (1999: 510) argue that human resource management entails an ‘inherent duality’ between ‘strong economic calculative considerations and a more humanistic orientation’ and therefore distinguish two types of practice: ‘collaborative’ and ‘calculative’, structured by both agency and institutional settings in different countries. The indicators of the two forms that they develop are shown in Table 1 below:

- Table 1 about here -

The calculative-collaborative distinction is useful, even if the elements in each category can be questioned. Thus, not only are the two scales not mirror images of each other,

but the calculative scale includes aspects that may equally be collaborative and the collaborative scale is basically a measure of communication within the organization. In order to capture high-trust relations in the collaborative form, we need to add to the Gooderham scales some assessment of how far work processes are delegated to employees, how far their views are sought through consultative mechanisms, and how worker collectives are reinforced by group payment systems. We therefore incorporate three further indicators: one showing the extent of team-working, the second showing the extent of collective consultative practices and the third showing the extent of group payment systems.

Levine and D'Andrea Tyson (1990), amongst others, report that substantial shop floor participation leads to some combination of an increase in satisfaction, commitment, quality, and productivity, and a reduction in labour turnover and absenteeism. Therefore, we further extend our analysis of performance by relating labour extraction measures: absenteeism (*abse*) and turnover (*turn*) to various factors affecting the extraction function. Low turnover has been shown to have a considerable affect on the effectiveness of HPWSs in generating improved results in the US context (Guthrie et al., 2004).

In the spirit of Bowles (1985), Gordon (1994), and Osterman (1994) we view these human resource management strategies as instruments designed to enhance the 'labour extraction function'. Our first argument is that the labour extraction function should be viewed as endogenously determined by the interaction of the institutional environment and firm-specific practices (e.g., Bowles, 1985). Our second argument, pursued in parallel with the first, is that collaborative forms of HRM are more likely to enhance the labour extraction process and bring improved performance than calculative alternatives (e.g., Levine and D'Andrea Tyson, 1990). Third, we argue that the different forms of practices are likely to be differentially supported by different institutional frameworks (Gooderham et al., 1999).

There have been many attempts, especially by American authors, to link human resource management policies and practices and firm performance; we make no attempt to review them here (for reviews, see Guest et al., 2003; Paauwe, 2009; Wright and Haggerty, 2005). Early studies tended to link a limited set of management practices to outcomes (see, for example, Cutcher-Gershenfeld, 1991). Later studies, inspired by the ‘High Performance Work Systems’ (HPWS) paradigm, identified bundles of practices that were linked with superior organisational performance (Appelbaum et al, 2000; Becker and Gerhart, 1996; Huselid, 1995; Stavrou, Brewster and Charalambous, 2010). However, there have also been empirical studies yielding negative results (Cappelli and Neumark, 2001) and the HPWS school of thought has been criticised for failing to recognise that conflicts in the employment relationship are likely to limit HRM effectiveness (Godard, 2004). Godard’s (2004) criticism is consistent with that made of the HPWS literature by Wright and Haggerty (2005) who argue that there are missing variables in the discussion (those normally used are typically pay linked to productivity and promotion possibilities). The missing variables are those linked both to employee relations broadly conceived and those relating to collaborative, trust-building practices. We therefore adopt a method that meets these criticisms by testing the links between two types of management practices encapsulating two different employee-employer relations paradigms and firm performance. These variables are particularly relevant in Europe, where employment relationships (even in the UK) are characterised by a relatively strong collective dimension in comparison to the USA (Hall and Gingerich, 2005).

An alternative, less satisfactory framework for analysing the link between labour use and organisational performance is that of neoclassical efficiency-wage theory. The theory treats workers’ motivation as exogenous to the firm and the industrial relations system (note that employee motivation is assumed to depend solely on the real wage rate and intensity of monitoring). Yet, from the lack of trade-off between wages and monitoring shown in studies

of 'high and low trust' national groupings, it follows that employees' motivation must be treated as endogenous to the nature of labour-management relations (Gordon, 1994; Naastepad and Storm, 2006).

There are other aspects of the labour extraction function (which may not be directly driven by management practices in relation to labour) that are, by and large, indicators of high-trust relations. A minimum degree of co-operation is a necessary condition of production, but the level of co-operation may be raised if trust is at a high level (Akerlof, 1982). Trust, defined as the supposition by each side that the other will act benevolently, is more fragile and conditional on the perceived solidity of institutional guarantees (Creed and Miles, 1996; Goergen et al., forthcoming; Hoff, 2002). Levels of trust may show some consistency across organisations, but are also likely to vary between different work and occupational groups, and employee strata; the difference between different employee strata is reflected in the Gooderham et al. (1999) indicators.

As Buchele and Christiansen (1999, p. 91) argue, continuous improvements in productivity depend not on individual efforts, but on the effective interaction among workers (teamwork), among work groups or departments (coordination), and between management and workers (cooperation). Baldamus (1961) argued that effort cannot be measured, and therefore management monitoring of employees had to be subordinated to motivational methods; the extent to which employees' ideas of trust and teamwork were influenced by management become of vital importance to superior company performance. Because no contract can be complete, a degree of control will always remain with employees, necessitating management efforts to build trust, reflected in efforts to influence employees' underlying emotions (Baldamus, 1961, p.41).

Akerlof (1982) similarly shows that individuals' productive behaviour is determined by the social definition of the situation adopted by the relevant workers. Akerlof (1982)

focuses on the implicit gift-exchange nature of employment arrangements, where exchange is based on reciprocity and trust and relations are endogenously determined.¹ Management has to make constant efforts to influence these relations (MacInnes et al., 1985). Further, employees' willingness to give up the protection offered by rigid work rules, disclose their proprietary (tacit) knowledge, and initiate changes in the production process that raise labour productivity and the firm's capacity for innovation, depends, to a large extent, on management committing to 'high-trust' work practices (Buchele and Christiansen, 1999; Naastepad and Storm, 2006). The (Taylorist) alternative is high levels of employee monitoring, which threaten to undermine trust. The implication is that cooperative and group-based practices with strong implicit gift exchanges will tend to enhance firm performance.

However, national systems do not determine managerial strategies. At firm level, systemic options present managements, even in highly co-ordinated systems such as those in Germany, with considerable room for practices that differ from the clusters of ideal firm types specified by Whitley (Singe and Croucher, 2005). 'High-trust' practices may also be attempted in low trust economies with varying degrees of success (Danford et al., 2005; Goergen et al., forthcoming), and may be more supported by legal and institutional arrangements in 'low-trust' economies than sometimes recognised, as UK case studies have indicated (Deakin et al. 2006). On the other hand, perceived breaches of trust by managements in "high-trust" countries (for example, raising the intensity of monitoring or refusing real wage growth), may also occur. In these countries, an increase in monitoring

¹More specifically, Akerlof's (1982) model posits that monitoring is performed by employee groups. Excess remuneration to some members of the employee group and leniency of work rules constitute the major gifts by the employer to employees. Employees' gift to the employer - effort in excess of formal work standards - is linked to the employer's gift to employees. The key assumption in this mechanism is reciprocity as a major feature of gift exchange, as well as of market exchange. In gift exchanges, however, effort norms are established according to the 'fair day's work' concept rather than by market forces. In return employees expect to be treated fairly by the employer. The concept of fair treatment is not based on absolute standards but, rather, on comparisons of one's own situation with that of other individuals. Individuals use comparison with others as a guide to how they ought to behave or how they ought to be treated.

intensity, *ceteris paribus*, may cause reduced employees' effort and productivity even more drastically (Drago and Perlman, 1989; Goergen et al., forthcoming; Naastepad and Storm, 2006).

In summary, our hypotheses on the optimality of HRM practices and their synergies within various institutional settings are as follows:

H1: Collaborative forms of HRM practice are more strongly associated with superior firm performance than calculative forms

H2: These associations are strongest where national institutional and normative settings support them

H3: Employer-employee consultative committees and collective payment methods are associated with superior firm performance.

Data and variables

We econometrically test the hypotheses derived from our theoretical analysis using data extracted from Cranet. We use data from the 1999/2000 round of surveys, while the study by Gooderham et al. (1999), which we extend, uses the previous round of surveys in 1995/1996.

Since a central issue in our analysis is the importance of institutional factors and organisational practices for the labour extraction function, and thus for firm performance, we use data from several countries exhibiting diverse institutional settings and diverse labour management practices. Following this line of reasoning we also control for and compare results from samples with and without firms that are foreign subsidiaries.² The rationale is that although such firms' practices may generally be not that much different from those of the indigenous companies (Brewster, Wood and Brookes, 2008; Farndale, Brewster and Poutsma, 2008)

²We report here results for samples where we do not exclude but control for the status of a firm being a foreign subsidiary. Using Wald tests of differences between coefficients estimated from the full and the restricted sample shows that the coefficients do not significantly differ. We report here results from the full sample with a control for foreign subsidiary status which does not appear to be statistically significant in any specification.

this is a complex relationship (ibid.) and may have been at least influenced by different country-of-origin institutional environments, albeit in a complex way as argued by Gooderham et al. (1998).

The main dependent variable in our analysis is firm performance (*perf*) measured as a composite index comprised of five partial measures: service quality, level of productivity, profitability, product to market time, and rate of innovation. Each partial measure is an ordinal categorical variable.³ We apply Mokken's nonparametric scaling approach to produce our synthetic performance measure (Mokken and Lewis, 1982). The unweighted sum of item scores has to be monotonously related to the latent true scores as demonstrated by Sijtsma et al.(1990). This implies that Mokken's model provides estimates of the scale scores only at ordinal level. As in other studies, the primary scaling criterion is Loevinger's H-coefficient of homogeneity. A set of items constitute a scale if the total scale has a H-value exceeding 0.30; values above 0.50 indicate strong scales. The details of the items included in the performance scale, results of the scaling procedure, and reliability analysis are reported in Table 2.

- Table 2 about here -

As noted above we believe absenteeism (*abse*) and turnover (*turn*) to be factors affecting the labour extraction function and we therefore add them to our analysis. Absenteeism is measured as average days per employee per year. Turnover is the annual staff turnover in percent. Both measures of labour extraction are approximate and are

³We recognise a potential bias in the construction of the dependent variable. The dependent variable is a composite index of five measures, including service quality and innovation. Arguably, it might favour a collaborative view, since service quality and innovation are, theoretically, both, when effective, dependent more strongly upon collaborative processes. However, it has also been argued that innovation for example is more likely to be found in calculative settings such as the liberal market economies (Bartelsman and Hinloopen, 2005; Deelen et al., 2006). In order to investigate the issue empirically, we run regressions with only narrowly defined, and neutral to HRM, measures of performance, specifically, level of productivity and profitability. The results of these regressions are qualitatively very similar to the results reported in the paper suggesting that the formulation of the dependent variable as a composite index does not bias our main findings. The auxiliary regression results are available from the authors upon request.

affected by various economic and institutional country-specific factors in addition to the main determinants of the labour extraction function. With this caveat, linking absenteeism and turnover to human resource management practices in regressions where we have controlled for major economic and institutional factors for represents a useful empirical representation of our theoretical framework.

To formulate measures of the human resource management strategies within firms that approximate aspects of institutional environment at firm level as well we refer to the strategic HRM model of calculative or collaborative practices following Gooderham et al. (1999).

Next, we extend the Gooderham et al. (1999) typology with a third measure explicitly reflecting the existence of joint consultative committees and group payment systems, which we designate group-based practices (*grpr*). In this index we include features at firm level reflecting the existence of joint employee consultative committees and profit-sharing schemes applied to different segments of the labour force. We expect that the index will capture some aspects of the impact of Akerlof's (1982) implicit gift exchange mechanism on labour extraction and ultimately on firm performance.

To develop measures for calculative and collaborative practices, we use Mokken's nonparametric latent trait model for unidimensional scaling (Mokken and Lewis, 1982). Thus, we follow the methodology used by Gooderham et al. (1999) which allows us to compare the measures of interest estimated with data from two consecutive rounds of surveys. Mokken's approach does not make overly restrictive assumptions and provides an internal scaling criterion that ensures a unidimensional scale. This is an important advantage in this case where dichotomous items are used and do not satisfy the assumption of interval scale items. Details of the items included in the scales, results of the scaling procedure, and reliability analysis are reported in Table 1.

Besides variables of interest related to these alternative management practices, the determinants of the labour extraction function - cost of job loss at firm level (w^d) and intensity of monitoring (s) – are the main variables in our performance regression specifications. The w^d variable is measured as the percentage of labour cost in the operating costs which when controlled for firm size and external market conditions (see below) would approximate to the potential cost of job loss at firm level. The s variable is measured by the proportion of the firm's employees that are managers. In the Cranet dataset there are three other categories of employees reported: manual, clerical and professional (technical) employees. As Gordon (1994) argues, the proportion of managers in the firm's employment approximates to the intensity of monitoring.

Finally, we control for several other firm characteristics affecting performance. These are log of firm size ($lfsize$) and log of firm age ($lfage$), qualitative characteristics of the labour force such as dummy variable indicating employees 45 years of age or older ($eage45$) and dummy variable indicating employees with at least higher education ($eedugr$). Market conditions are controlled for by a three-step ordinal scale ($market$) indicating whether the firm's market is booming, steady or stagnating. Industrial sector information – a set of industry dummy variables - is included in all regression specifications (except the base one). In all regressions a control dummy variable for foreign-subsidary status of firms is also included. Country dummy variables are used in all extended regression specifications to control for important variations in institutional settings. In selected specifications also cross-effects of the country dummies and HRM variables of interest are included in addition. Summary statistics and short definitions of all regression variables are reported in Table 3.⁴

- Table 3 about here -

⁴In all regressions we have included as controls for measurement error, due to self-reporting, variables describing important characteristics of individuals that filled out the questionnaires. These individual-level control variables are gender, education, years of service in the organization and we assume that they are not correlated with the firm-level variables.

4 Results

We estimate three sets of OLS regressions. First, we estimate a set of equations where firm performance is directly linked to the HRM variables of interest while controlling for institutional context and several other important determinants of performance such as firm size and age, qualitative characteristics of the labour force, market conditions, and industry specificity. The results of this analysis are reported in Tables 4a and 4b. We start with a base specification where only variables corresponding to the neoclassical efficiency-wage model are included. Then we extend the specification by introducing a richer set of controls and HRM practice variables. Second, we consider a direct empirical approximation of the labour extraction function, using two dependent variables, labour force turnover and absenteeism. We extend the specifications in a manner similar to the performance regressions. The results are reported in Table 5a and Table 5b, respectively.⁵

- Table 4a about here -

Tables 4a and 4b contain several general findings of interest. The management practice variables have positive and, in general, statistically significant impacts on firm performance. When the variables are interacted with country dummies (Table 4b), thus controlling for the specific link between HRM practices and institutional settings, we find differential effects of the variables of interest on firm performance. Overall, the effect of collaborative practices is positive and significant in countries variously categorised in VoC literature as ‘co-operative’, ‘co-ordinated’ and so on (e.g., Scandinavia, Germany, France). The group-based-practices variable significantly impacts performance of firms in the ‘co-ordinated’ category of country such as France. In most countries it seems that both types of

⁵All regressions contain a dummy variable controlling for the foreign-subsiary status of firms, and individual-reporter controls which were all found not to be statistically significant in any regression and therefore their coefficients were not reported. Furthermore, the stepwise introduction of explanatory variables and the stability of coefficients in all regressions suggest minimal problems with endogeneity.

HRM approach coexist; however, there usually is one dominant (or more important) type of practice affecting firm performance.

- Table 4b about here -

Thus, the results related to the interaction between HRM practices and country-specific (institutional) conditions are of particular interest. Specifically, Table 4b shows that calculative practices affect performance positively (but not statistically significantly) in most countries analysed, compared to the reference country (the UK). The only country where calculative practices have a negative and statistically significant impact on performance is Denmark. This may be related to the very specific evolution of Danish industrial relations (Due et al., 1994). Collaborative practices seem to have stronger economic and statistically significant positive impacts on performance in several 'co-operative' or 'co-ordinated' countries variously such as France, Germany, Sweden, Denmark, Belgium and Spain. With respect to group-based practices, UK firms appear to perform similar to firms in other countries as only firms in France outperform British firms. Group-based practices also have a positive but not statistically significant impact on performance in several other 'co-operative' or 'co-ordinated' countries.

The results in Table 5a and Table 5b confirm our main findings as the largest impact derives from collaborative and group-based practices. Absenteeism (Table 5a) is lower in firms that employ any of the three types of practices, controlling for industry and country effects. Turnover (Table 5b) is also minimised by applying HRM practices. These results suggest that the labour extraction function is improved by systematic application of the practices at firm level. It is evident that collaborative and group-based practices have a stronger impact in both sets of regressions. When the link between HRM and country-specific institutions is explored, we again find differential effects across countries and types of practice, in line with the different institutional contexts. These findings confirm our

proposition that the labour extraction function should be viewed as endogenously determined by the interaction of the institutional environment and firm-specific HRM rather than as simply an exogenous trade-off between wages and monitoring as neoclassical efficiency-wage theory asserts.

- Table 5a about here -

Specifically, in Table 5a, column (4), the interaction terms of collaborative practices measure are negative for all countries and are statistically significant for Germany, Sweden, Denmark, and Austria. This suggests that collaborative practices improve labour extraction in every country. However, the impact is strongest in the four countries mentioned. The relationships depicted by the interaction terms of group-based practices measure are also negative everywhere, implying less absenteeism, except in Spain where the coefficient is positive but statistically insignificant. Interestingly, the impact of group-based practices on absenteeism is most statistically significant in the Scandinavian countries.

- Table 5b about here -

The results in Table 5b, column (4) where the dependent variable is employee turnover also support the general proposition that both collaborative and group-based HRM practices positively impact the labour extraction process. It is important to note, however, that when the cross effects of calculative practices measure are considered, for several countries (Denmark, Finland, Austria and Belgium) the effects are positive, suggesting that there is more employee turnover in firms that use calculative practices. The results for the cross effects of collaborative practices measure are the opposite and show that the impact on labour extraction is positive (as demonstrated by low turnover) in all countries as the effect is statistically significant in France, Germany, Sweden, Denmark, and Finland. The results for cross effects of group-based practices measure are mixed as the labour extraction function appears to be adversely (reflected in high turnover) and statistically significantly affected in

Spain and Ireland two countries with different institutions and level of co-ordination of the economy.

5 Conclusion and discussion

The chapter has tested the theoretically derived hypothesis (H1) that collaborative forms of HRM are more likely to enhance the labour extraction process and firm performance than calculative alternatives. The proposition was supported in those countries where the institutional setting was most conducive to these organisational level practices (H2), which are essentially related to strong communication with employees. The countries concerned are the strongest versions of the 'Co-ordinated Market Economies' of Western Europe (Hall and Gingerich, 2005). This supplements and is consistent with other studies' findings (Brewster et al., 2007a, b) in relation to forms of employee voice. Within these national contexts, different forms of voice are encouraged by the institutional framework and therefore coexist, mutually reinforcing each other, optimizing employee wages and working conditions, productivity and organizational performance (Hubler and Jirjahn, 2003). In the UK context, inherent tensions between different forms of practice exist, with particularly strong pressures towards individualization and direct forms of expression (Bryson, 2004).

Calculative practices had a weaker impact on the labour extraction function and firm performance. In the case of Denmark, these were negatively associated with performance and negatively associated with absenteeism and turnover. Denmark has an institutional framework providing especially strong support for collaborative practices, and has been categorised as an unambiguously 'Co-ordinated Market Economy' (Hall and Soskice, 2001; Hall and Gingerich, 2005). Others, however, have categorized Denmark, along with the Netherlands, as flexicurity countries (Bekker, 2011; Madsen, 2004; Méda, 2011; Viebrock and Clasen, 2009), a separate form of market economy. It is distinctive within the CME

category for its high degree of employer-union consensual decision taking, requiring relatively little state intervention for its maintenance (Due et al., 1994, 2000). This suggests that in a country with an especially strong institutional and normative disposition towards collaborative practices, the contrast between calculative practices and these contextual factors is so acute as to generate a counterproductive employee reaction and weaker firm performance.

We also tested the hypothesis (H3) that group-based practices might also generate improved employee-employer relationships and performance. The findings here are more mixed, but confirm and extend to other countries analyses, specifically to the German case (Addison et al., 2004; Singe and Croucher, 2005). Other strongly collaborative national contexts gave similar results. The mixed nature of the findings concerning group-based practices is to be expected given the wide range of contents subsumed under this heading. They also interact with other arrangements; their effectiveness is conditional on a wide range of factors, including how they are combined with other complementary approaches such as quality circles (Becker and Gerhart, 1996). Group-based practices were expected to give positive results in countries where they were strongly supported by the context and again, this was the case. In Sweden, such practices had a strong effect on absenteeism in relation to the UK reference group, possibly because of their content but equally possibly because of the way that they act in line with the particularly strong collaborative institutional framework (Whitley, 1999).

The limitations of this study are firstly that employee attitudes have not been directly tested and secondly that self-reported (subjective) measures of all the indicators are used. In the latter case, for reasons of confidentiality, the performance data cannot be matched with accounting data. However there is evidence of a strong correlation between managerial reports of firm performance and external, independent measures (Dess and Robinson, 1984;

Geringer and Herbert, 1991; Powell, 1992). Provided respondents are at a senior enough level (which is the case for the Cranet respondents), subjective and objective measures of performance converge and their relationships with independent variables are equivalent (Wall Mitchie, Patterson, Wood, Sheenhan, Clegg and West, 2004; c.f. Delaney and Huselid, 1996). Nonetheless, it would have been ideal to combine these with more objective measures as recommended by Wall et al. (2004). Future research could usefully address both of these limitations. In the first case, that of employee attitudes, there is a particular need not only to approach the issue by survey data but also to combine survey data with other data (which might helpfully be observationally-derived) that could demonstrate the mechanisms at work at organisational level.

Nevertheless, our findings have significant implications for political economy. First, they provide underpinning for the utility of the 'CME' concept itself, which has been criticised for a lack of differentiation (Allen, 2004; Amable, 2003), but which in respect of the employment practice-performance link appears to have some justification. On the other hand, the finding has a second consequence for the significance of the Varieties of Capitalism conceptualisation. Central to the Varieties of Capitalism formulation in its original form is the argument that particular national institutional configurations cannot be considered 'superior' to others. Rather, it is a question of the 'fit' between labour market practices, the mode of production ('Fordist' or 'flexible specialisation') at organisational level and the requirements of the markets being sold into that determine success in specific markets (Hall and Soskice, 2001). Becker (2007) has criticised the theory, suggesting that practices may be quite different from those envisaged by Hall and Soskice, but may nevertheless be 'equi-functional'. In this view, LMEs can perform as well as CMEs even in 'flexible specialisation' types of production if companies adopt 'equi-functional' practices. In short, companies

operating in LMEs can succeed even in markets demanding high quality where they compensate for a lack of contextual support.

Our findings demonstrate that the CME model is superior in supporting productive efficiency at the organisational level. This is consistent with Panic (2007), who demonstrates that there are no macro-economic performance grounds for ‘liberalising’ European economies since the Scandinavian economies have performed comparatively well, especially in relation to LMEs. Our evidence supplements his by showing that the ways that CMEs encourage company level communications appear central to raising efficiency. All of this supports the EU policy of attempting to extend industrial communications policies across the EU, including to the LMEs (Britain and Ireland) and the new entrant countries via such measures as the Information and Consultation Directive. It also tends to support an argument that the weak transposition of the Directive into English law is inadequate and unlikely to foster the diffusion of collaborative practices (Hall, 2005).

References

- Ackroyd, S. and P. Thompson (1999) *Organizational Misbehaviour*. London, Sage.
- Addison, J., C. Schnabel, and J. Wagner (2004) The course of research into the economic consequences of German works councils. *British Journal of Industrial Relations* 42(2), 255-281.
- Akerlof, G. (1982) Labor contracts as partial gift exchange. *Quarterly Journal of Economics* 97(4), 543-569.
- Allen, M. (2004) Varieties of capitalism: not enough variety. *Socio-Economic Review* 2(1), 87-108.
- Amable, B. (2003) *The Diversity of Modern Capitalism*. Oxford, Oxford University Press.
- Appelbaum, E., T. Bailey, P. Berg, and A.L. Kallenberg (2000) *Manufacturing Advantage: Why High Performance Work Systems Pay Off*. Ithaca, Cornell University Press.
- Bartelsman, E. and J. Hinloopen (2005), 'Unleashing Animal Spirits: Investment in ICT and Economic Growth', in L. Soete and B. terWeel (eds.), *The Economics of the Digital Economy* (Cheltenham: Edward Elgar), pp. 272-304.
- Becker, U. (2007) Open systemness and contested reference frames and change. A reformulation of the varieties of capitalism theory. *Socio-Economic Review* 5 (2), 261-286.
- Becker, G. and B. Gerhart (1996) The impact of HRM on organizational performance. *Academy of Management Journal* 39, 779-801.
- Bekker, S. (2011) *Flexicurity. Explaining the development of a European concept*, Nijmegen: Iskamp Drukkers.
- Baldamus, W.G. (1961) *Efficiency and Effort: An Analysis of Industrial Administration*. London, Tavistock.
- Bowles, S. (1985) The production process in a competitive economy: Walrasian, Neo-Hobbesian and Marxian models. *American Economic Review* 75 (1), 16-36.
- Brewster, C., Brookes, M., Croucher, R. and Wood, G. (2007) Collective and Individual Voice: Convergence in Europe? *International Journal of Human Resource Management*. 18 (7): 1246-1262
- Brewster, C., Wood, G. and Brookes, M. (2008) Similarity, Isomorphism or Duality: recent survey evidence on the HRM policies of Multinational Corporations *British Journal of Management* 19 (4): 320-342
- Brewster, C., G. Wood, R. Croucher and M. Brookes (2007) Are Works Councils a Threat to Trade Unions? A Comparative Analysis. *Economic and Industrial Democracy* 28(1), 49-77.
- Bryson, A. (2004) Managerial Responsiveness to Union and Nonunion Worker Voice in Britain. *Industrial Relations* 43(1), 213-241.
- Buchele, R. and J. Christensen (1999) Labor relations and productivity growth in advanced capitalist economies. *Review of Radical Political Economics* 31(1), 87-110.
- Cappelli, P. and D. Neumark (2001) Do high performance work systems improve establishment level outcomes? *Industrial and Labor Relations Review* 54(4), 737-775.

- Creed, W.E.D. and R.E. Miles(1996) Trust in organizations: A conceptual framework linking organizational forms, managerial philosophies, and the opportunity costs of controls,pp.16-38. In Kramer, R.M. andT.R. Tyler(Eds.) Trust in Organizations: Frontiers of Theory and Research,California, Sage, Thousand Oaks.
- Cutcher-Gershenfeld, J. (1991) The impact on economic performance of a transformation in workplace relations. *Industrial and Labor Relations Review* 44(2), 241-260.
- Danford, A., M. Richardson, P. Stewart, S. Tailby, and M. Upchurch (2005) Partnership and the High Performance Workplace: Work and Employment Relations in the Aerospace Industry. Basingstoke, Palgrave Macmillan.
- Deakin, S., R. Hobbs, S. Konzelmann, and F. Wilkinson(2006) Anglo American corporate governance and the employment relationship: A case to answer?Socio-Economic Review 4, 155-174.
- Deelen, A., E. Jongen and S. Visser (2006), 'Employment Protection Legislation. Lessons from Theoretical and Empirical Studies for the Dutch Case', Document No 135 (CentraalPlan Bureau CPB).
- Delaney, J. and Huselid, M. (1996), 'The Impact of Human Resource Practices on Perceptions of Organizational Performance', *Academy of Management Journal*, Vol. 39, no. 4, pp. 949-969).
- Dess, G.G. and Robinson, R.B. (1984), 'Measuring Organizational Performance in the Absence of Objective Measures',*StrategicManagement Journal*, Vol.5, No. 3, pp. 265-73.
- Drago, R. and R. Perlman (1989) Supervision and high wages as competing incentives: A basis for labour segmentation theory. In Drago, R. and R. Perlman (Eds.) *Microeconomic Issues in Labour Economics: New Approaches*. New York, Harvester Press.
- Due, J., J.S. Madsen, C.S. Jensen, and L.K. Petersen (1994)The Survival of the Danish Model. Copenhagen, DJØF.
- Due, J., J.S. Madsen, and C.S. Jensen(2000) The 'September Compromise': a strategic choice by Danish employers in 1899. *Historical Studies in Industrial Relations* 10, 43-70.
- Farndale, E., Brewster, C. and Poutsma, E. (2008) Co-ordinated vs liberal market HRM: the impact of institutionalisation on multinational firms *International Journal of Human Resource Management* 19 (11): 2004-2023
- Fredman, S. (2006) Transformation or dilution: Fundamental rights in the European social space. *European Law Journal* 12, 41-60.
- Geringer, M. and Herbert,L. (1991), 'Measuring Performance of International Joint Ventures', *Journal of International Business Studies*, Vol. 28, no. 4: 249-263.
- Godard, J. (2004) A critical assessment of the high-performance paradigm. *British Journal of Industrial Relations* 42(2), 349-378.
- Goergen, M., Chahine,S., Brewster, C. and Wood, G. (forthcoming) Trust, Owner Rights, Employees and Firm Performance
- Gooderham, P., O. Nordhaug, and K. Ringdal(1999) Institutional and rational determinants of organizational practices: Human resource management in European firms. *Administrative Science Quarterly* 44, 507-531.

- Gooderham, P., O. Nordhaug, and K. Ringdal(1998) When in Rome, do they do as Romans? HRM practices of US subsidiaries in Europe. *Management International Review* 38, 47-63.
- Gooderham, P. and O.Nordhaug (2003) *International management: Cross-Boundary Challenges*. Oxford, Blackwell.
- Gordon, D. (1994) Bosses of different stripes: A cross-national perspective on monitoring and supervision. *American Economic Review* 84(2), 375-379.
- Guest, D., J. Mitchie, M. Sheehan, and N. Conway (2003) A UK study of the relationship between human resource management and corporate performance. *British Journal of Industrial Relations* 41(2), 291-314.
- Guthrie, J.P., D.K. Datta, and P.M. Wright(2004) Peeling back the onion. Competitive advantage through people and test of a causal model. *Cornell Centre for Advanced HR Studies, Working Paper 04-09*, Cornell University.
- Hall, M. (2005) Assessing the information and consultation of employees regulations. *Industrial Law Journal* 34(2), 103-126.
- Hall, P.A. and D. Soskice (2001) *Varieties of Capitalism: The Institutional Foundations of Competitive Advantage* (Eds.). Oxford, Oxford University Press.
- Hall, P.A. and D.W. Gingerich(2005) *Varieties of capitalism and institutional complementarities in the macroeconomy*.MPiFG Discussion Paper 04/5. Cologne, Max Planck Institute.
- Harcourt, M. andG. Wood(2007)*The importance of employment protection for skill development in coordinated market economies*. *European Journal of Industrial Relations* 13(2),141-160.
- Harrison, R. (1993) Concepts and issues in human resource management, pp. 35-66. In Harrison, R. (Ed.) *Human Resource Management: Issues and Strategies*. Wokingham, Addison-Wesley.
- Hoff, A. (2002) *Vertrauensarbeitszeit: Einfach Flexible Arbeiten*.Wiesbaden, Gabler Verlag.
- Hubler, O. and Jirjahn, U. (2003) Works Councils and Collective Bargaining in Germany: The Impact on Productivity and Wages. *Scottish Journal of Political Economy* 50(4), 471-492.
- Huselid, M.A. (1995) The impact of human resource management practices on turnover, productivity, and corporate financial performance. *The Academy of Management Journal* 38(3), 635-672.
- Lane, C. (2000) Globalization and the German model of capitalism - erosion or survival? *British Journal of Sociology* 51(3), 207-234
- Lane, C. (2003) Changes in Corporate Governance of German Corporations: convergence to the Anglo-American model? *Competition and Change* 7(2-3),79-100.
- Legge, K. (2005) *Human Resource Management: Rhetoric and Realities*. London, MacMillan.
- Levine, D.I. and L. D'Andrea Tyson (1990) Participation, productivity and the firm's environment. In Blinder, A.S. (Ed.) *Paying for Productivity: A Look at the Evidence*. Washington, DC, Brookings Institution.
- MacInnes, J., P. Cressey, and J. Eldridge(1985) *Just Managing: Authority and Democracy in Industry*. Milton Keynes, Open University Press.

- Madsen, P.K. (2004) The Danish model of 'flexicurity'. *Transfer*, 10 (2), 187-216.
- Martens, H. (1999) Auslaufmodell oder Reformkonzept für die Teilhabegesellschaft? *Soziale Welt* 1/1999, 67-86.
- Méda, D. (2011) 'Post-face: La flexibilité peut-elle encore constituer une ambition pour l'Europe' in *Formation emploi*, no. 113 : 97-109.
- Mokken, R. and C. Lewis (1982) A nonparametric approach to the analysis of dichotomous item responses. *Applied Psychological Measurement* 6, 417-430.
- Naastepad C.W.M. and S. Storm (2006) The innovating firm in a societal context: Labor-management relations and labor productivity, Ch. 9, pp. 170-191. In Verburg, R.M., J.R. Ortt, and W.M. Dicke (Eds.) *Managing Technology and Innovation*, London, Routledge.
- Osterman, P. (1994) Supervision, discretion, and work organization. *American Economic Review* 84(2), 380-384.
- Panic, M. (2007) Does Europe need neoliberal reforms? *Cambridge Journal of Economics* 31(1), 145-169.
- Paauwe, J. (2009) HRM and performance: Achievements, methodological issues and prospects. *Journal of Management Studies*, 46(1), 129-142.
- Powell, M. (1991), 'Towards a Dynamic Theory of Strategy', *Strategic Management Journal*, Vol. 13, no. 7, pp. 119-134
- Singe, I. and R. Croucher (2005) US multi-nationals and the German industrial relations system. *Management Review* 16(1), 123-137.
- Sjitsma, K., P. Debets, and I.W. Molenaar (1990) Mokken scale analysis for polytomous items: Theory, a computer program and an empirical application. *Quality and Quantity* 24, 173-188.
- Stavrou, E., Brewster, C. and Charalambous, C. (2010) Human Resource Management and firm performance in Europe through the lens of business systems: best fit, best practice or both? *International Journal of Human Resource Management* 21 (7): 933-962
- Tzafrir, S. (2005) The relationship between trust, HRM practices and firm performance. *International Journal of Human Resource Management* 16(9), 1600-1622.
- Viebrock, E. & J. Clasen (2009) 'Flexicurity and welfare reform: a review', *Socio-Economic Review* 7 (2): 305-331.
- Wall, T.D., J. Mitchie, M. Patterson, S.J. Wood, N. Sheenhan, C.W. Clegg, and M. West (2004) On the validity of subjective measures of company performance. *Personnel Psychology* 57, 95-118.
- Whitley, R. (1999) *Divergent Capitalisms*. Oxford, Oxford University Press
- Wright, P.M. and J.J. Haggerty (2005) Missing variables in theories of strategic HRM. *Management Review* 16(2), 164-173.

Table 1 Calculative and Collaborative LMPs

Calculative: Individual and formal	Collaborative: Mission, briefings, communication
<p><i>Individual</i> performance appraisals for managers</p> <p><i>Individual</i> performance appraisals for professional/technical staff</p> <p><i>Individual</i> performance appraisals for clerical staff</p> <p><i>Individual</i> performance appraisals for manual staff</p> <p><i>Individual</i> reward systems (merit pay and performance related pay) for managers</p> <p><i>Individual</i> reward systems (merit pay and performance related pay) for professional/technical staff</p> <p><i>Individual</i> reward systems (merit pay and performance related pay) for clerical staff</p> <p><i>Individual</i> reward systems (merit pay and performance related pay) for manual staff</p> <p><i>Formal</i> evaluation of personnel training immediately after training</p> <p><i>Formal</i> evaluation of training some months later</p>	<p>Written <i>mission</i> statement</p> <p>Formal <i>briefings</i> about company strategy for managers</p> <p>Formal <i>briefings</i> about company strategy for professional/technical staff</p> <p>Formal <i>briefings</i> about company strategy for clerical staff</p> <p>Formal <i>briefings</i> about company strategy for manual staff</p> <p>Written <i>communication</i> policy with employees</p>

Table 2 Performance and LMPs scales

Scale/Variable	MSP		Alpha
	Mean	H	
Performance scale (<i>perf</i>)	-	0.45	0.76
Profitability between 3 and 1 (high-low)	2.13	0.43	0.71
Productivity between 3 and 1 (high-low)	2.21	0.49	0.69
Service quality between 3 and 1 (high-low)	2.45	0.44	0.74
Product to market between 3 and 1 (high-low)	2.06	0.50	0.68
Innovation between 3 and 1 (high-low)	2.10	0.40	0.73
Calculative scale (<i>calc</i>)	-	0.64	0.71
Individual rewards: manual	0.15	0.84	0.69
Individual rewards: clerical	0.28	0.87	0.68
Individual rewards: professionals	0.41	0.87	0.69
Individual rewards: managers	0.66	0.82	0.71
Performance appraisal: manual	0.47	0.46	0.68
Performance appraisal: clerical	0.60	0.62	0.65
Performance appraisal: professionals	0.65	0.66	0.65
Performance appraisal: managers	0.67	0.56	0.67
Formal evaluation: immediate	0.52	0.36	0.70
Formal evaluation: later	0.32	0.43	0.71
Collaborative scale (<i>coll</i>)	-	0.63	0.70
Strategy briefings: manual	0.36	0.88	0.57
Strategy briefings: clerical	0.47	0.84	0.54
Strategy briefings: professionals	0.62	0.76	0.59
Strategy briefings: managers	0.96	0.67	0.71
Written mission statement	0.80	0.36	0.71
Communication policy	0.77	0.30	0.73
Group-practices scale (<i>grpr</i>)	-	0.57	0.71
Joint consultative committee	0.56	0.30	0.75
Employee share options: manual	0.15	0.56	0.68
Employee share options: clerical	0.16	0.53	0.68
Employee share options: professionals	0.19	0.49	0.68
Profit sharing: manual	0.20	0.58	0.66
Profit sharing: clerical	0.24	0.63	0.66
Profit sharing: professionals	0.29	0.65	0.66
Group bonus: manual	0.21	0.61	0.70
Group bonus: clerical	0.20	0.66	0.69
Group bonus: professionals	0.21	0.68	0.69

Notes: MSP denotes Mokken Scaling Program. H is Loevinger's coefficient of homogeneity (weighted); all H-coefficients are significantly different from zero at the 0.001 level. Alpha is Cronbach's alpha measure of reliability.

Table 3 Summary statistics of regression variables

Variable	Description	Mean	S.d.
<i>perf</i>	Performance composite index ranging between 5 and 15 (low-high)	10.97	2.30
<i>absc</i>	Average number of days of absence per employee per year	7.95	6.52
<i>turn</i>	Employee turnover at firm level in percent per year	8.24	10.58
<i>w^d</i>	Percentage of labour cost in total operating cost	38.98	21.36
<i>s</i>	Ratio of managers to employees in percent	9.10	9.20
<i>lfsize</i>	Log of firm size (total labour force)	6.05	1.20
<i>lfage</i>	Log of firm age (years)	3.66	0.91
<i>eage45</i>	Percentage of labour force 45 years of age or older	32.87	18.76
<i>eedugr</i>	Percentage of labour force with graduate or post-graduate education	23.11	16.77
<i>market</i>	Index of market conditions and business cycle development ranging between 1 and 3 (recession-expansion)	1.61	0.70
<i>calc</i>	Calculative LMPs composite index ranging between 0 and 10	4.65	2.23
<i>coll</i>	Collaborative LMPs composite index ranging between 0 and 6	3.97	1.62
<i>grpr</i>	Group-based LMPs composite index ranging between 0 and 10	4.24	2.05
Manufacturing	Manufacturing industries dummy variable	0.50	0.79
Construction	Construction industries dummy variable	0.04	0.20
Transportation	Transportation industries dummy variable	0.06	0.24
Bank and finance	Banking and finance services industries dummy variable	0.09	0.29
Personal services	Personal services industries dummy variable	0.01	0.11
Other industries	Other industries dummy variable	0.30	0.46
Foreign subsidiary	Dummy variable which is 1 if the firm is a foreign subsidiary and 0 otherwise	0.30	0.46
UK	UK dummy variable	0.14	0.34
France	France dummy variable	0.08	0.26
Germany	Germany dummy variable	0.15	0.35
Sweden	Sweden dummy variable	0.04	0.21
Spain	Spain dummy variable	0.06	0.23
Denmark	Denmark dummy variable	0.08	0.27
Norway	Norway dummy variable	0.13	0.34
Ireland	Ireland dummy variable	0.11	0.31
Finland	Finland dummy variable	0.11	0.31
Austria	Austria dummy variable	0.05	0.23
Belgium	Belgium dummy variable	0.05	0.22

Note: Number of observations used in calculating summery statistics is 1045 except for *absc* and *turn* where number of observations is 779 and 965, respectively.

Table 4a Regression analysis of firm performance

Variable	(1)	(2)	(3)	(4)
<i>w^d</i>	-0.019 (0.003)	-0.018 (0.004)	-0.017 (0.004)	-0.015 (0.004)
<i>s</i>	0.006 (0.008)	0.006 (0.009)	0.006 (0.009)	0.007 (0.009)
<i>lfsize</i>	0.025 (0.059)	0.077 (0.064)	0.0049 (0.064)	0.016 (0.065)
<i>lfage</i>	-0.204 (0.082)	-0.167 (0.084)	-0.153 (0.084)	-0.155 (0.084)
<i>eage45</i>	-0.004 (0.004)	-0.003 (0.004)	-0.003 (0.004)	-0.003 (0.004)
<i>eedugr</i>	0.004 (0.003)	0.006 (0.003)	0.005 (0.003)	0.004 (0.003)
<i>market</i>	0.182 (0.102)	0.206 (0.103)	0.202 (0.103)	0.194 (0.102)
<i>calc</i>	-	-	0.063 (0.032)	0.056 (0.032)
<i>coll</i>	-	-	0.075 (0.045)	0.066 (0.047)
<i>grpr</i>	-	-	-	0.102 (0.039)
Construction	-	0.329 (0.361)	0.402 (0.361)	0.445 (0.360)
Transportation	-	-0.187 (0.309)	-0.129 (0.361)	-0.080 (0.308)
Bank and finance	-	-0.229 (0.274)	-0.261 (0.273)	-0.249 (0.272)
Personal services	-	0.455 (0.632)	0.427 (0.631)	0.436 (0.629)
Other industries	-	-0.300 (0.182)	-0.278 (0.182)	-0.202 (0.184)
France	-	-0.709 (0.360)	-0.635 (0.328)	-0.727 (0.338)
Germany	-	0.297 (0.272)	0.145 (0.277)	0.077 (0.277)
Sweden	-	-0.500 (0.380)	-0.581 (0.380)	-0.526 (0.379)
Spain	-	-0.260 (0.353)	-0.158 (0.355)	-0.188 (0.357)
Denmark	-	0.014 (0.322)	0.075 (0.324)	0.167 (0.325)
Norway	-	-0.134 (0.279)	-0.020 (0.285)	-0.041 (0.285)
Ireland	-	0.023 (0.302)	0.087 (0.302)	0.158 (0.302)
Finland	-	-0.001 (0.289)	0.036 (0.302)	0.063 (0.302)
Austria	-	0.802 (0.355)	0.885 (0.356)	0.943 (0.355)
Belgium	-	0.315 (0.364)	0.281 (0.363)	0.355 (0.364)
Control for subsidiary	Yes	Yes	Yes	Yes
Controls for reporter	Yes	Yes	Yes	Yes
\bar{R}^2	0.24	0.28	0.32	0.35
Number observations	1045	1045	1045	1045

Note: In the table each column shows coefficients and standard errors in parenthesis. Coefficients in bold denote significance at 10% level or better. Reference country is the UK and reference industry is manufacturing.

Table 4b Regression analysis of firm performance: cross effects

Variable	(5)	(6)
<i>w^d</i>	-0.017 (0.004)	-0.015 (0.004)
<i>s</i>	0.005 (0.009)	0.004 (0.009)
<i>lfsize</i>	0.057 (0.065)	0.047 (0.066)
<i>lfage</i>	-0.172 (0.085)	-0.168 (0.085)
<i>eage45</i>	-0.003 (0.004)	-0.002 (0.004)
<i>eedugr</i>	0.005 (0.003)	0.004 (0.003)
<i>market</i>	0.198 (0.104)	0.199 (0.104)
<i>calc</i>	0.032 (0.084)	0.032 (0.084)
<i>coll</i>	0.030 (0.118)	0.040 (0.118)
<i>grpr</i>	-	0.111 (0.059)
France	-1.540 (1.036)	-1.415 (1.127)
Germany	0.981 (0.781)	1.063 (0.824)
Sweden	-0.968 (0.631)	-1.046 (0.853)
Spain	-1.280 (1.080)	-1.841 (1.117)
Denmark	-0.969 (0.992)	-0.711 (0.914)
Norway	-0.796 (0.844)	-0.773 (0.862)
Ireland	0.576 (0.926)	0.796 (0.940)
Finland	0.199 (0.994)	0.183 (0.901)
Austria	0.610 (0.892)	0.482 (0.588)
Belgium	-0.693 (0.452)	-0.572 (0.413)
France*calc	0.031 (0.134)	0.036 (0.138)
Germany*calc	0.166 (0.122)	0.163 (0.122)
Sweden*calc	0.190 (0.189)	0.200 (0.188)
Spain*calc	0.133 (0.176)	0.167 (0.178)
Denmark*calc	-0.410 (0.137)	-0.314 (0.143)
Norway*calc	-0.046 (0.117)	-0.052 (0.119)
Ireland*calc	-0.093 (0.129)	-0.099 (0.130)
Finland*calc	0.018 (0.126)	0.010 (0.126)
Austria*calc	0.062 (0.156)	0.074 (0.155)
Belgium*calc	0.096 (0.162)	0.064 (0.170)
France*coll	0.291 (0.129)	0.322 (0.159)
Germany*coll	0.201 (0.133)	0.203 (0.132)
Sweden*coll	0.146 (0.083)	0.130 (0.083)
Spain*coll	0.380 (0.224)	0.373 (0.223)
Denmark*coll	0.272 (0.155)	0.269 (0.154)
Norway*coll	0.172 (0.174)	0.154 (0.175)
Ireland*coll	-0.027 (0.180)	-0.034 (0.184)
Finland*coll	-0.051 (0.193)	-0.072 (0.194)
Austria*coll	0.042 (0.158)	-0.037 (0.157)
Belgium*coll	0.334 (0.201)	0.328 (0.206)
France*grpr	-	0.226 (0.135)
Germany*grpr	-	0.081 (0.136)
Sweden*grpr	-	-0.012 (0.165)
Spain*grpr	-	0.289 (0.225)
Denmark*grpr	-	-0.196 (0.219)
Norway*grpr	-	-0.126 (0.129)
Ireland*grpr	-	-0.035 (0.131)
Finland*grpr	-	0.061 (0.126)
Austria*grpr	-	0.133 (0.148)
Belgium*grpr	-	0.088 (0.132)
Control for subsidiary	Yes	Yes
Controls for reporter	Yes	Yes

\bar{R}^2	0.39	0.43
Number observations	1045	1045

Note: In the table each column shows coefficients and standard errors in parenthesis. Coefficients in bold denote significance at 10% level or better. Industry dummies are included in all regressions but results are not reported. Reference country is the UK and reference industry is manufacturing.

Table 5a Analysis of labour extraction function: absenteeism

Variable	(1)	(2)	(3)	(4)
<i>w^d</i>	0.009 (0.012)	0.008 (0.012)	0.006 (0.012)	0.007 (0.013)
<i>s</i>	-0.035 (0.027)	-0.056 (0.029)	-0.054 (0.029)	-0.058 (0.030)
<i>lfsize</i>	0.423 (0.194)	0.370 (0.204)	0.458 (0.211)	0.402 (0.214)
<i>lfage</i>	-0.029 (0.265)	-0.218 (0.268)	-0.195 (0.269)	-0.123 (0.274)
<i>eage45</i>	0.039 (0.012)	0.039 (0.012)	0.040 (0.013)	0.036 (0.013)
<i>eedugr</i>	-0.030 (0.009)	-0.025 (0.009)	-0.024 (0.009)	-0.023 (0.009)
<i>market</i>	-0.234 (0.340)	-0.133 (0.336)	-0.094 (0.337)	-0.111 (0.342)
<i>calc</i>	-	-	-0.042 (0.104)	-0.027 (0.253)
<i>coll</i>	-	-	-0.172 (0.103)	-0.114 (0.360)
<i>grpr</i>	-	-	-0.200 (0.108)	-0.068 (0.242)
France	-	3.159 (1.048)	3.354 (1.100)	4.583 (2.801)
Germany	-	2.262 (0.821)	2.022 (0.842)	3.341 (2.569)
Sweden	-	6.043 (1.354)	6.037 (1.358)	6.308 (4.023)
Spain	-	2.374 (1.098)	1.983 (1.120)	3.820 (2.507)
Denmark	-	-1.842 (1.074)	-1.914 (1.093)	-1.835 (1.330)
Norway	-	3.046 (0.846)	3.028 (0.877)	2.377 (2.669)
Ireland	-	0.251 (0.969)	0.116 (0.981)	0.695 (1.118)
Finland	-	-1.335 (0.928)	-1.186 (0.950)	-2.396 (2.339)
Austria	-	2.683 (1.114)	2.502 (1.118)	4.926 (2.181)
Belgium	-	0.060 (0.203)	-0.020 (0.205)	1.440 (2.064)
France*calc	-	-	-	-0.478 (0.430)
Germany*calc	-	-	-	-0.030 (0.077)
Sweden*calc	-	-	-	1.111 (0.780)
Spain*calc	-	-	-	-0.695 (0.562)
Denmark*calc	-	-	-	0.224 (0.477)
Norway*calc	-	-	-	0.191 (0.358)
Ireland*calc	-	-	-	0.095 (0.212)
Finland*calc	-	-	-	0.523 (0.407)
Austria*calc	-	-	-	-0.206 (0.511)
Belgium*calc	-	-	-	-0.080 (0.525)
France*coll	-	-	-	-0.014 (0.087)
Germany*coll	-	-	-	-0.397 (0.218)
Sweden*coll	-	-	-	-1.153 (0.703)
Spain*coll	-	-	-	0.092 (0.590)
Denmark*coll	-	-	-	-0.270 (0.137)
Norway*coll	-	-	-	-0.739 (0.532)
Ireland*coll	-	-	-	-0.260 (0.412)
Finland*coll	-	-	-	-0.326 (0.324)
Austria*coll	-	-	-	-1.326 (0.705)
Belgium*coll	-	-	-	-0.253 (0.347)
France*grpr	-	-	-	-0.116 (0.099)
Germany*grpr	-	-	-	-0.056 (0.117)
Sweden*grpr	-	-	-	-2.146 (0.572)
Spain*grpr	-	-	-	0.351 (0.837)
Denmark*grpr	-	-	-	-0.141 (0.076)
Norway*grpr	-	-	-	-0.372 (0.210)
Ireland*grpr	-	-	-	-0.002 (0.159)
Finland*grpr	-	-	-	-0.585 (0.349)
Austria*grpr	-	-	-	-0.174 (0.186)
Belgium*grpr	-	-	-	-0.034 (0.074)
Control for subsidiary	Yes	Yes	Yes	Yes

\bar{R}^2	0.23	0.30	0.34	0.41
Number observations	779	779	779	779

Note: In the table each column shows coefficients and standard errors in parenthesis. Coefficients in bold denote significance at 10% level or better. Industry dummies are included in all regressions but results are not reported. Reference country is the UK and reference industry is manufacturing.

Table 5b Analysis of labour extraction function: turnover

Variable	(1)	(2)	(3)	(4)
<i>w^d</i>	0.032 (0.016)	0.016 (0.017)	0.016 (0.017)	0.016 (0.017)
<i>s</i>	0.095 (0.040)	0.045 (0.044)	0.036 (0.044)	0.050 (0.045)
<i>lfsize</i>	0.432 (0.255)	0.264 (0.290)	0.295 (0.300)	0.296 (0.302)
<i>lfage</i>	-1.505 (0.378)	-1.098 (0.379)	-0.996 (0.380)	-0.919 (0.385)
<i>eage45</i>	-0.075 (0.018)	-0.080 (0.018)	-0.076 (0.018)	-0.082 (0.018)
<i>eedugr</i>	-0.019 (0.012)	-0.027 (0.012)	-0.027 (0.013)	-0.028 (0.013)
<i>market</i>	0.766 (0.482)	0.698 (0.472)	0.718 (0.473)	0.651 (0.479)
<i>calc</i>	-	-	-0.128 (0.094)	-0.138 (0.386)
<i>coll</i>	-	-	-0.394 (0.151)	-0.658 (0.536)
<i>grpr</i>	-	-	-0.315 (0.183)	-0.622 (0.364)
France	-	-7.178 (1.484)	-6.780 (1.542)	-2.209 (3.394)
Germany	-	-8.239 (1.227)	-8.133 (1.252)	-9.006 (3.808)
Sweden	-	-8.064 (1.700)	-8.342 (1.703)	-8.996 (7.491)
Spain	-	-5.269 (1.672)	-5.639 (1.697)	-2.591 (3.609)
Denmark	-	-3.951 (1.495)	-3.656 (1.518)	-6.549 (3.952)
Norway	-	-6.720 (1.244)	-6.139 (1.278)	-8.298 (3.927)
Ireland	-	-5.879 (1.380)	-5.785 (1.390)	-8.737 (4.318)
Finland	-	-7.712 (1.358)	-7.323 (1.377)	-6.735 (4.719)
Austria	-	-7.847 (1.628)	-7.393 (1.634)	-9.596 (5.145)
Belgium	-	-7.558 (1.629)	-7.899 (1.630)	-9.689 (5.131)
France*calc	-	-	-	-0.570 (0.640)
Germany*calc	-	-	-	0.7757 (0.560)
Sweden*calc	-	-	-	0.537 (0.836)
Spain*calc	-	-	-	-0.839 (0.885)
Denmark*calc	-	-	-	1.182 (0.661)
Norway*calc	-	-	-	0.248 (0.539)
Ireland*calc	-	-	-	0.862 (0.604)
Finland*calc	-	-	-	1.488 (0.590)
Austria*calc	-	-	-	0.813 (0.424)
Belgium*calc	-	-	-	0.773 (0.355)
France*coll	-	-	-	-1.790 (0.938)
Germany*coll	-	-	-	-0.824 (0.497)
Sweden*coll	-	-	-	-0.732 (0.442)
Spain*coll	-	-	-	-1.921 (1.233)
Denmark*coll	-	-	-	-1.277 (0.729)
Norway*coll	-	-	-	-0.157 (0.591)
Ireland*coll	-	-	-	-0.999 (0.855)
Finland*coll	-	-	-	-1.618 (0.904)
Austria*coll	-	-	-	-0.638 (1.205)
Belgium*coll	-	-	-	-0.351 (0.974)
France*grpr	-	-	-	-0.280 (0.733)
Germany*grpr	-	-	-	-0.041 (0.420)
Sweden*grpr	-	-	-	0.258 (0.745)
Spain*grpr	-	-	-	1.712 (1.008)
Denmark*grpr	-	-	-	-1.429 (1.090)
Norway*grpr	-	-	-	-0.215 (0.664)
Ireland*grpr	-	-	-	1.234 (0.622)
Finland*grpr	-	-	-	-0.138 (0.595)
Austria*grpr	-	-	-	0.366 (0.858)
Belgium*grpr	-	-	-	-0.250 (1.013)
Control for subsidiary	Yes	Yes	Yes	Yes

\bar{R}^2	0.25	0.32	0.36	0.42
Number observations	965	965	965	965

Note: In the table each column shows coefficients and standard errors in parenthesis. Coefficients in bold denote significance at 10% level or better. Industry dummies are included in all regressions but results are not reported. Reference country is the UK and reference industry is manufacturing.