National Embeddedness and Calculative HRM in US Subsidiaries in Europe and Australia

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Abstract

This article presents a study of the degree to which national institutional settings impact on the application of management practices in foreign subsidiaries of multinational companies. Applying the national business systems approach our study centres on the use of calculative human resource management (HRM) practices by subsidiaries of US multinational companies in the UK, Ireland, Germany, Denmark/Norway and Australia, respectively, in comparison with these countries' indigenous firms. The analysis indicates that while US subsidiaries adapt to the local setting in terms of applying calculative HRM practices, they also diverge from indigenous firm practices.

Introduction

The purpose of this article is to study the degree to which national institutional settings impact on managerial practices in foreign subsidiaries of multinational companies (MNCs). We address the question as to whether such subsidiaries will transfer and apply practices that are prevalent in the country-of-origin or whether they will adapt to the local institutional environment. This question will be approached through an analysis of the application of three characteristically US human resource management (HRM) practices, individual performance appraisals, individual rewards systems or merit pay, and monitoring of the effectiveness of training, in indigenous firms and subsidiaries of US multinational companies located in four European settings, the UK, Ireland, Germany and Denmark/Norway, together with Australia. On the basis of institutional theory we test hypotheses concerning differences in the application of these practices between US

subsidiaries and indigenous firms in all five countries, between indigenous firms by country and between US subsidiaries by country.

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Theoretical Background

During the last decades a broad array of research focusing on institutional determinants of managerial and organizational practices has been published. Different directions can be distinguished, carrying labels such as varieties of capitalism (Hall & Soskice, 2001; 2003; Hall & Gingerich, 2004), national business systems (Whitley, 1992; 1999), work systems (Geppert et al., 2003), cultural systems (e.g., Myloni et al., 2004) and new institutional organizaton theory (e.g., Powell and DiMaggio, 1991; Scott, 1995). Although these theoretical perspectives diverge on important dimensions, they all share the conception that institutional factors are more important antecedents of management practices than are rational factors, such as technology, firm size, and industrial embeddedness. Institutional factors have evolved as a result of long historical processes that have generated significant national and regional differences. The point of departure is the notion that social institutions contribute heavily to the development and use of various administrative practices and systems in firms and other organizations (e.g., Whitley, 1992; Whitley, 1999; Maurice & Sorge, 2000; Hall & Soskice, 2001). This approach has increasingly been applied in comparative empirical studies of the actual application of managerial and organizational practices in different countries and regions (Gooderham et al., 1998, 1999; Geppert et al., 2002; Geppert, 2002; Geppert et al., 2003; Sorge, 2004).

   Moreover, there is a growing body of work focusing on the transfer of such practices across countries through the operations of multinational companies, which is also the focus of this article (Ferner, 1997; Gooderham et al., 1998; Schuler & Rogovsky, 1998; Edwards & Ferner, 2000; Ferner, 2000; Ferner, 2003; Harzing & Sorge, 2003). Kostova

and Roth (2002:215) have argued that an important source of competitive advantage for MNCs is the utilization of their organizational capabilities on a worldwide basis through the leveraging of their management practices across their subsidiaries. However, they also point to the need subsidiaries have to achieve and maintain legitimacy in the environment in which they operate (Gooderham et al., 1999). That is they experience pressure to adopt local practices and become isomorphic with the local institutional context. Hereby there lies a tension between the need for global integration, on the one hand, and local adaptation, on the other. At the subsidiary level this is experienced as two sets of pressures. They are both confronted by an external host country institutional environment and by pressures from within the organization to become isomorphic to the parent organization's norms (Harzing, 2002:213).

The implication is that the degree of global integration should vary according to the degree to which the local institutional context the subsidiary confronts differs from the norms of the parent organization. By extension, because these norms will be substantially derived from the parent organization's own institutional environment, the degree of local adaptation will reflect the degree of divergence between the local institutional context and the parent institutional context. In this article we will empirically test this proposition by analysing the degree to which characteristically US HRM practices are applied by subsidiaries of US MNCs in Australia and across four European settings, the UK, Ireland, Germany, and Denmark/Norway combined.

Standard neo-institutional explanations of management practices and strategies predict similarity among firms that operate in the same industry or organizational field within the context of a single society or national economy (DiMaggio and Powell, 1991; Dobbin, Sutton, Meyer and Scott, 1993; Gulati, 1999; Hitt et al., 2004; Peng, 2005; Peng et al., 2005). While one may expect differences between industries, within industries and not

least within firms, firms will implement those practices that are deemed to contribute to the achievement of external legitimacy. Although new institutionalism in organizational theory implies a rejection of rational actor models, emphasizing instead the pressures for acquiring and maintaining legitimacy in relation to the environment (see, e.g. DiMaggio, 1983; DiMaggio and Powell, 1983; Powell and DiMaggio, 1991), it shares the broad, long- term expectation that uniform pressures will lead to intra-industry uniformity of management practices (McNamara et al., 2002). That is, they both presuppose isomorphism.

This is in contrast with the growing body of literature that has been assigned the label national business systems in which the focus is on national cultures and unique societal and institutional structures and how these support dissimilar business and management practices (Mayer and Whittington, 2002). That is, these two research directions diverge radically in regard to the convergence of practices across different national settings. While the neo-institutionalist reasoning assumes a dissemination of standard management practices and a subsequent development towards universality of practice across the MNC regardless of national setting, the national business systems approach research is preoccupied with the sustainability of the influence of national culture and institutions on such practices. Hence, in terms of the national business systems perspective, MNCs will tend to be sensitive to the possibility of significant cross-national differences in management practices. Additionally, on the basis the national business systems approach it is reasonable to postulate that the degree to which a foreign subsidiary will deviate in terms of its management practices will be determined by the degree to which the national, institutional setting of the parent company diverges from that of the subsidiary.

As this article focuses on the potential adaptations made by subsidiaries of US MNCs across different national settings, we will firstly delineate the institutional setting of US

MNCs and the resultant characteristic US HRM practices. Thereafter we will briefly describe the institutional contexts of the five selected national settings. This will form the basis on which we formulate and test our three hypotheses.

The US Context and Calculative HRM Practices

Weinstein and Kochan (1995) divide US employment relations from the late 1930s to the present day into two phases, the New Deal industrial relations system, which extended from the 1930s through the 1970s and more recent developments, which we will refer to as US HRM.

In the 1970s, American mass production grappled with the persistent effects of increased international competition and a more uncertain business environment. New flexible productive techniques emerged in the wake of advances in information technology stimulating a shift in competitive strategy toward flexible specialization aimed at producing differentiated, high-value-added products (Piore and Sabel, 1984). Coupled to these changes were significant changes to the institutional environment in which unions became increasingly marginalized while management and shareholders increased their power. In this, as Weinstein and Kochan (1995:27) observe, "Government played an important role by weakening its enforcement of labour and employment laws and by allowing (some would say encouraging) a harder line by management in its resistance to unions". As Ferner (2000) and Ferner et al. (2004) argue the American business system that emerged can be understood as a distinctive model of economic organisation within the general category of "liberal market economies". It is characterized by a dominant individualist ethos and a strong anti-union mentality among many American employers. Overall, pay and performance management became characterized by the innovative use of performance systems, including merit pay and forced distributions. Thus the new model that emerged was different in that whereas wages in the traditional system had been

attached to jobs rather than individuals, in the new model there was a pronounced move to tie wages to individual performance and competency in the form of individual incentives. It is in terms of this context, characterized by substantial firm autonomy, that Tichy, Fombrun, and Devanna's (1984) HRM model is to be understood: that is, a model that emphasizes the systematic use of individual performance appraisals, individual performance-related rewards and outcomes-monitored training and development.

In summary, US HRM, with its stress on the close synchronization of human resource policies and activities with the overall business strategy through efficient reward and appraisal systems and development monitoring systems, is essentially indicative of a rational, *calculative* approach (Gooderham, et al., 1999). While based on an assumption of employer-employee unanimity, this is a unitarist rather a social partnership approach (Sparrow and Hiltrop, 1994).

It is important to note that we do not pretend in any way to cover HRM as a whole but that we focus on indicators of the calculative approach to managing human resources, that is, individual performance appraisal, individual rewards systems, and monitoring of the effects of training.

National Contexts

In his book *Capitalisme contre Capitalisme* (1991) Michel Albert distinguished on the one hand between US or 'Anglo-Saxon' capitalism and on the other a continental, West European type of capitalism which he labelled the 'Rhineland model'. The former is a 'shareholder economy' under which private enterprise is about maximising short-term profits for investors rather than any broader harmony of interests. In contrast "…the Rhineland model may be viewed as a regulated market economy with a comprehensive system of social security. Government, employers' organisations and labour unions

consult each other about economic goals (in order to) try to achieve a harmony of interests" (Bolkestein, 1999). In short the Rhineland model is a 'stakeholder economy' in which competition and confrontation is avoided in the belief that it undermines sustainable, stable economic growth. Patrolling this economy is the state, which variously acts as a referee, guarantor, employer and owner.

 A more recent distinction within the national business systems approach is between the "liberal market economies" (LMEs) of the US, the UK, Ireland and Australia and the "coordinated market economies" (CMEs) of much of Continental Europe (Hall and Soskice, 2001). Firms operating in the latter context are regarded as significantly more institutionally embedded than those in the former, in the sense that they operate within contexts whose legal frameworks and systems of industrial relations constrain them from applying market driven or technologically contingent management practices particularly in regard to pay policy. Whereas in LMEs there are substantial pay differentials even within the same industries, in CMEs much pay negotiation occurs at the industry level, taking pay negotiation out of the workplace.

 At a general level in Europe substantial firm autonomy and weak trade unions is the exception rather than the rule. Thus Pieper (1990:8) has concluded that "…The major difference between HRM in the US and in Western Europe is the degree to which [HRM] is influenced and determined by state regulations. Companies have a narrower scope of choice in regard to personnel management than in the US". Let us review the archetypal CME setting, Germany and thereafter the Scandinavian setting, as illustrated by Denmark and Norway.

Germany

Although unionization in German work-life has dropped considerably since the 1970s, and in 1994 was down to 30 percent, over 90 percent of the workforce is covered by collective bargaining agreements which are the exclusive territory of the labor unions in a system of regional, industry-wide bargaining (Scholz, 1996). In addition, attention should be drawn to the elaborate German system of co-determination, which is regulated at the plant level by the Works Constitution Act of 1972 and at the enterprise level by the Works Constitution Act of 1952, superseded by the "Mitbestimmungsgesetz" (MitbestG) of 1976 (cf. Hollingsworth, 1997). As a consequence of this legislation, employers need to maintain positive relations with the works councils. These are powerful, employee-elected bodies legally entitled to co-determination, consultation, and access to important information, hence restricting the degree of managerial autonomy (Scholz, 1996; Streeck, 1997; Wächter and Müller-Camen, 2002; Wächter and Stengelhofen, 1995).

This is not to say that various techniques associated with the calculative HRM model are completely absent but that their potential use has invariably been subject to the critical eye of the works councils (Lane, 1994). Not least, these councils have also sought to preserve the strong traditions of social welfare that have characterized employers' treatment of their human resources.

Hassel (1999) has claimed that German industrial relations have been eroded during the last two decades. One important aspect to her "erosion" thesis is that the institutional base of the German industrial system has not been able to transfer its institutions into the growing segment of small and medium-sized companies in the private service sector. In other words the German industrial relations system is increasingly concentrated on large companies in the manufacturing sector. Opposing this thesis Klikauer (2002) argues that the system remains intact and that any changes relate to unification and the public sector.

To underpin this argument he inter alia employs Hassel's own data that shows that 97.2 per cent of all workplaces above 300 workers have works councils. While we do not aim at resolving this debate it should be pointed out the data set we will employ in this paper excludes smaller firms, i.e. firms with fewer than one hundred employees. Furthermore, as we will indicate, our analysis controls for the effect of sector or industry. In other words our analysis is largely concerned with what Hassel (1999: 502) refers to as "the backbone of the German model" that is indisputably characterized not only by powerful labor representative bodies but also by strong work legislation. Hence, in terms of the context of our analysis low scores on calculative HRM can be expected not only for indigenous German firms, but also for subsidiaries of US MNCs.

Denmark and Norway

  In a comparison of the legislative environment for work-life in Denmark and Norway Graver (1995) observes that in both of these countries there is a strong and pronounced framework intended to ensure that conflicts are resolved at the firm-level. In both countries, in regard to issues relating to major structural changes, such as downsizing, outsourcing, and potential mergers, labor unions are legally entitled to be consulted. However, as Graver (1995) indicates, the legislative framework is more general than that of Germany thereby permitting experiments with novel HRM practices. In summary, we find that in Denmark and Norway labor unions generally both possess and exert considerable influence on the management of firms (Bévort, Pedersen and Sundbo, 1995). Together with the fact that individual rights of employees are strongly protected by laws and agreements this means that the general autonomy of management is significantly restricted (Kristensen, 1992). The consequence should be that the personnel functions of

subsidiaries of US MNCs as well as indigenous firms have limited latitude to apply calculative practices.

Thus far we have reviewed two prototypical Western European stakeholder settings. However, within Europe there are two markedly deviant national settings. The first of these is the United Kingdom the other is Ireland.

United Kingdom

The United Kingdom is unique in the European context in that during the 1980s its employment legislation was subject to radical changes. Most notably, this legislation includes the Employment Acts of 1980, 1982, 1988 and 1990, and the Trade Union Act of 1984. Coupled to these acts are severe civil penalties. Together, these acts curbed the unions' right to recognition, outlawed the closed shop and secondary picketing, and narrowed the freedom of unions to call strikes (for instance, by a requirement that a secret ballot of the members is to be called first). The result was a considerable increase in general managerial autonomy (Edwards et al., 1992) and the opportunity to innovate in employment and labor strategies (Mabey and Iles, 1996; Rubery and Wilkinson, 1994). In a review of trends in HRM in the UK based on the Workplace Employee Relations Survey from 1998, Richbell (2002) observes that this opportunity has resulted in a pronounced move away from standard pay scales towards systems which reflect individual performance and behaviour such as the increased use of the core calculative practice of performance related pay.

In summary, given the change in institutional context in the UK, it is reasonable to expect that not only do indigenous firms demonstrate a propensity for the adoption of calculative practices but that subsidiaries of US MNCs will also freely apply their calculative HRM practices.

Australia

In the early part of the twentieth century Australia developed a system of industrial relations characterized by compulsory arbitration (Dabscheck, 2004). That is, state agencies gained the authority to settle disputes and make binding agreements that prescribed wages and working conditions. However, Barry and Wailes (2004) observe that this system was so significantly modified in 1993 with the introduction of the *Industrial Relations Reform Act* that it is questionable whether it is possible to speak of an arbitral model in Australia after this point in time. Not only did it limit the terms and conditions of bargaining but it also effectively created the possibility of legally sanctioned non-union agreements. The *Workplace Relations Act* of 1996 further constrained the scope of the authority of the Australian arbitration system in regard to non-union individual agreements. The resultant fragmentation of channels of wage determination produced substantial fragmentation of wage outcomes. Changes in legislation were accompanied by major decline in unionization: in 1992 39.6 per cent of the Australian workforce were members of trade unions, in 1999 it was 25.7 per cent (Barry and Wailes, 2004).

In the light of these radical changes to the Australian regulatory framework as well the empirical evidence of divergent wage outcomes it seems reasonable to expect that we may observe the adoption of calculative HRM practices by indigenous firms. In addition the regulatory framework means that subsidiaries of US MNCs will also be free to apply their calculative HRM practices within the Australian context.

Ireland

The Irish national context is ostensibly contiguous with that of the Rhineland context in that trade unions enjoy strong legitimacy and collective bargaining rights. The trade union movement is a key actor in shaping economic and social policy in its role as a "social partner" (Gunnigle et al., 2002). However, since the early 1980s Ireland may be distinguished from Rhineland Europe in that its pursuit of foreign direct investment has caused it to grant legitimacy to "green-field" sites, which allow firms generous amounts of freedom to decide their preferred form of industrial relations (Gunnigle and McGuire, 2001). Significantly, research has indicated that it is primarily US MNCs that have used this latitude to pursue a unitary style of management characterized by a strong level of calculative HRM practices combined with non-union agreements (Gunnigle et al., 1997).

Hypotheses

On the basis of the above we may hypothesize as follows:

Hypothesis 1: The use of calculative HRM practices will be significantly higher in US subsidiaries than in indigenous firms in all countries.

Hypothesis 2: The use of calculative HRM practices will be significantly lower in indigenous German, Danish/Norwegian and Irish firms than in indigenous UK and Australian firms.

Hypothesis 3: The use of calculative HRM practices in US subsidiaries will be significantly lower in Germany and Denmark/Norway than in the UK, Ireland and Australia.

Methods

To test our predictions we have employed data derived from the 1999 Euronet-Cranfield survey of HRM in European and a range of non-European countries. The overall strategy of the survey has been to mail appropriately translated questionnaires to personnel managers in representative national samples of firms with more than one hundred employees (Brewster et al., 1996). Although the response rate for the individual countries is relatively low, mostly between 20 and 35 per cent, analyses suggest that statistical representativeness has not been impaired (Brewster et al., 1994).

Our initial sample comprised 3,186 private sector firms located in the UK, Ireland, Denmark/Norway, (former West) Germany and Australia. After removing firms that were neither indigenous nor fully-owned US subsidiaries our net sample consisted of 2769 firms. For the UK the sample comprised 988 firms, for Ireland 349, for Denmark/Norway 753, for Germany 456, and for Australia 223.The percentage of US owned firms varies from a low of 4 percent in Denmark/Norway, through 8 and 11 per cent respectively in Germany and the UK respectively to 22 per cent in Ireland, and 23 per cent in Australia. These marked national differences in the proportion of US owned firms in our sample are not surprising given the very different shares of foreign ownership in each of the economies (OECD, 2001).

The Mokken Scaling Model

To develop the scales for calculative HRM-practices we have used Mokken's latent trait model for unidimensional scaling (Sijtsma & Molenaar 2002). The model was first developed for dichotomous "0 – 1"-items as used in our application. A Mokken scale builds on the idea of cumulativeness in Guttman's approach, but the probabilistic nature of Mokken's model allows for non-perfect response patterns. The probability of success (score "1") on a particular items depends on the subject's (firm's) location on the latent trait, and is called its item response function (IRT). These functions may have the shape of a logistic curve. This is assumed in the parametric IRT models where the IRTs for different items differ only in the parameters of the logistic curve. Mokken's model of

monotone homogeneity poses no other restrictions than increasing IRFs and is designed to order subjects on the latent trait (Sijtsma & Molenaar 2002). A Mokken scale is nonparametric in the sense that the IRF curve does not have to have a special form. This makes the model very flexible, but also implies that neither the subject (firm) parameters nor the item parameters may be estimated directly. However, the unweighted sum of item scores is monotonously related to the latent true score (Sijtsma & Molenaar 2002: 15). This means that the Mokken model only provides estimates of scale scores at an ordinal level, whereas parametric IRT models allow for direct estimation of the true scores. However, the strong assumptions of the latter models contribute to limiting their applicability.

The primary scaling criterion is Loevinger's H coefficient of homogeneity. This is defined as: $H_{ij} = 1 - (F_{ij}/E_{ij})$, where F_{ij} is the sum of observed errors according to the Guttman scale model (i.e., the observed number of respondents who give a negative response to the "easier" item and a positive response to the more "difficult" item), and E_{ij} is the expected number of errors assuming that the responses to the items are independent across persons and that the marginal distributions are fixed (Sijtsma & Molenaar 2002). In the same way, the scalability of a single item with respect to the other items is defined by H_i, and the scalability of the total scale is measured by H. A set of items constitutes a scale if all $H_{ij} > 0$, and if every item coefficient of scalability, H_i, is larger than a constant c, set to at least 0.30. All H_i and the H should be significantly greater than zero according to a given level of significance. The total scale ought to have an H-value of at least 0.30 to form a weak scale. H-values between 0.40 and 0.50 indicate average scales and values above 0.50 indicate strong scales. The Mokken scaling model is implemented in the computer program MSP5 for Windows (Molenaar and Sijtsma, 2000).

The Dependent Variable

In order to measure the use of calculative HRM-practices we have developed a *Calc* scale based on 10 dichotomous items from the Euronet-Cranfield questionnaire : "individual performance appraisals" (items ca1-ca4), "individual rewards systems" (items

ca5-ca8), and "monitoring the effectiveness of training" (items ca9, ca10). The scale was

constructed using Mokken's scaling model as implemented in the MSP5 for5 Windows.

Table 1 shows all items, ordered by sample difficulties, that is, by their means. As all

items are dichotomous (0 - 1), the means are the proportion of firms employing the

management practice in question. The cumulative nature of the items in Table 1 is

evident. Performance appraisals are more commonly used than merit pay. Within the two

groups of items, the hierarchy is also evident. Merit pay for manuals is less frequent than

for professionals and managers. Performance appraisals for managers are much more

frequently used than performance appraisals for manuals. Taken together this indicates

that a cumulative scaling model is appropriate

   The main output from MSP5 is the *H*-statistic displayed in the second column of Table

1. The *H*-value for the *Calc* scale is 0.52 and indicates a strong scale. The reliability

analysis also gave satisfactory results. A Cronbach's alpha of 0.85, shows that the scale's

internal consistency is well above the standard minimum of 0.7. The average inter-item

correlation of 0.36 is also satisfactory. On the whole, the item-scale correlations are

satisfactory (i.e. > 0.30). In conclusion, the 10-item scale of calculative HRM practices

performs satisfactorily both in terms of scalability and reliability.

Insert Table 1 about here

   The *Calc* scale scores for each firm is calculated as the mean values of valid scores, i.e.

0 or 1, on the items, and multiplied by 100 so that the resulting scale varies between 0 and

100. Cases with valid values on less than seven indicators are coded as missing. High

scores indicate extensive use of calculative HRM-practices.

Independent variables

In addition to *Country*, our study includes four additional independent variables: industry, size, the strategy or market orientation of the firm, and the date when the firm was established in its particular setting.

Institutional theory assumes that industries develop along particular trajectories characterized by distinct economic and organizational dynamics that distinguish them from other industries (Hollingsworth et al., 1993). Because of this we include a variable that distinguishes manufacturing from banking and finance, construction, transport, personal services and other industries.

As noted by Scott (1998), most studies of the relation between organizational size and structure indicate that size, in terms of the number of employees, tends to influence the methods used for controlling and coordinating employees. The evidence suggests that the larger the size of the organization, the more standardization of HRM procedures (Pugh and Hickson, 1969).

The strategy of the firm is measured in terms of whether its main market is local or international. It is reasonable to suppose that subsidiaries of MNCs that are oriented towards purely local markets will be more prone to adapt to local institutional conditions than those whose function is global in the sense that they are producing for international markets. Likewise it may be supposed that indigenous firms with a global orientation will be more inclined to look beyond local best practices.

Finally we distinguish between firms that have been in the institutional setting for twenty years or more and more recent creations. The latter may be supposed to be less infused by the norms of the local environment than the former.

Results

Table 2 documents the variables to be used in the regression analysis. The dependent variable is the *Calc* scale with a mean of 51 in our sample and a standard deviation of 30.4. *Lnsize* is the natural logarithm of firm size, i.e. the number of employees. *Industry* is a categorical regressor represented by five 0 – 1-variables with *Manufacturing* as the reference category. Another two dummy variables represent whether the main market for the firm is abroad and whether the firm is established recently, i.e. in the period 1980-99. *Country* is a categorical regressor represented by dummy variables for Ireland, Denmark/Norway (grouped together), Germany and Australia, with the UK as the reference category. *USS* indicates whether the firm is US owned (USS=1) or indigenous (USS=0). Finally, we have the four *USS* by *Country* interaction terms: *USS*IR*, *USS*Den/Nor*, *USS*Ger,* and *USS*AUS.*

Insert Table 2 about here

The multiple regression analysis with *Calc* as the dependent variable is documented in Table 3. The first set of regressors function as controls: firm size, industry, the strategy or market orientation of the firm, and the date the firm was established in its particular setting. Our main independent variables are the *USS*, the country indicators, and the *USS* by *Country* interactions.

   Let us start by describing the results for the control variables. Firm size has a positive and relatively strong statistically significant effect on the use of calculative HRM-practices. This means that large firms use such practices to a greater extent than small

firms, controlling for the remaining variables in the model. Among the industries only *Banking and finance* score significantly higher on the *Calc* scale than the reference category, *Manufacturing*. Firms with foreign markets and firms that are established the last 20 years show more extensive use of calculative practices than firms with national markets and firms that are established before 1980. In total the controls explains about 9% of the variation in the *Calc* scale.

The next group of variables in Table 3 are the main effects of the country indicators. Since the latter are also included in the *USS* by *Country* interaction terms, they must be interpreted as the difference in the *Calc* score from the UK (the reference category) for indigenous firms. Thus, the negative coefficients for Ireland, Denmark/Norway and Germany indicate a less extensive use of calculative HRM-practices than in indigenous UK-firms. Indigenous firms in Denmark/Norway score on the average about 31 points lower on the *Calc* scale than indigenous UK-firms. The positive coefficient for Australia means that indigenous Australian firms score significantly higher on the *Calc* scale than do indigenous UK firms. The multiple correlation coefficients in the second panel of Table 2 show that the country indicators explain about 20% of the variance that remains in the dependent variable after the control variables were introduced in the first step. This is a further indication of rather pronounced country differences in the use of calculative HRM-practices.

Insert Table 3 about here

The last set of variables in Table 3 is the *USS*, which indicates whether the firm is a US subsidiary or an indigenous firm, and the four design variables for the *USS* by

Country interaction. Three of the five variables in the set have statistically significant effects beyond the .05 level. The interaction terms for Germany and Australia are, however, not statistically significant at any conventional level. This means that the increase in the use of calculative practices by US-owned firms in Germany and Australia compared to indigenous firms is about the same in those two countries as in the UK. To make for a more accessible interpretation of the results for the country indicators, the *USS*, and the interaction terms, the main results from the regression analysis are displayed in a more intuitive way in Figure 1. This figure shows the predicted means on the *Calc* scale for the eight combinations of country and US ownership, with control variables set to their means.

Insert Figure 1 about here

The white and dotted columns show the level of the use of calculative HRM-practices in indigenous firms in the five countries. Use of such practices is more common in the UK than in Ireland and Germany, and much more common in the UK than in Denmark/Norway. Indigenous Australian firms do, however, exceed UK firms in the adoption of calculative HRM-practices. The dark striped columns show the use of the selected practices in US subsidiaries which is substantially lower in US subsidiaries located in Denmark/Norway and Germany than in Ireland, the UK and Australia.

Discussion

Our overall proposition was informed by the national business systems approach implying that foreign subsidiaries of MNCs will tend to adapt their managerial practices to the specific national, institutional conditions within which they operate.

We have pursued this issue through a study of the degree to which national adaptations made by MNC subsidiaries reflect the degree of divergence between the national subsidiary context and parent country institutional contexts. The analysis was focussed on subsidiaries of US multinationals in four European settings as well as Australia and to their application of three core calculative HRM practices. Clearly future research should extend our analysis both in terms of subsidiary nationality, host countries and range of management practices. While mindful of these limitations it is reasonable to suggest that our findings are supportive of the overall proposition.

  The first hypothesis was the broadest of the three in the sense that it contrasted US subsidiaries' use of these three HRM practices with the use of similar practices in indigenous firms in all of the five selected countries. This was supported by the empirical analysis hence indicating support also for the overall proposition concerning the influence of national embeddedness of foreign subsidiaries of MNCs..

  Our second hypothesis was concerned with establishing that there are significant differences by country between indigenous firms in terms of the use they are institutionally able to make of calculative HRM. Our findings support the conception that the UK and Australia represent amenable settings for calculative HRM.

  The third hypothesis focussed on the degree to which US subsidiaries adapt to the five dissimilar national settings. The clearly lower means for US subsidiaries in Denmark/Norway and Germany compared to US subsidiaries located in the UK, Australia and Ireland indicate that US subsidiaries adapt to the local institutional setting. Thus hypothesis 3 is also supported. The effect of being a US subsidiary is, however, not uniform for these two CME settings, in that it is larger for Denmark/Norway than for Germany, possibly reflecting the less legalistic nature of the Danish/Norwegian setting. In line with our institutional analysis we can observe a

substantial effect of being a US subsidiary in Ireland due to the dualistic nature of the Irish institutional setting. The use US subsidiaries are able to make of calculative practices in green-field Ireland is similar to that of the deregulated UK. This institutional latitude may represent at least a partial explanation of Ireland's and the UK's attractiveness as destinations for US foreign direct investment. In regard to Australia our findings indicate considerable use of calculative HRM practices by indigenous firms and even greater use by subsidiaries of US MNCs. Clearly the legislative changes of the 1990s have created a very favourable setting for the application of calculative HRM practices.

Our findings also indicate that in regard to the indicators of a calculative HRM approach, US MNCs consistently diverge from their host country counterparts including the UK and Australia. As Ferner (2000) has surmised, this suggests that subsidiaries of US MNCs to a significant extent attempt to take with them and apply their own, nationally idiosyncratic, repertoire of HRM practices to their subsidiaries in foreign countries. However, our results for Denmark/Norway and Germany indicate that they nevertheless experience constraints in doing this. Hence our findings illustrate the notion of "tension" that Kostova and Roth (2002) refer to, between the need for local adaptation and global integration.

The theoretical implication for our understanding of the transfer of management practices by MNCs is that, while rational explanations have some validity, they must supplemented with institutional perspectives not least those contained in the national business systems approach.

Finally, it should be pointed out that this study has several limitations in regard to addressing the broad proposition that was our point of departure. One is that we have only focussed on three HRM practices and further studies should attempt to analyse a

wider array of such practices, for instance, the use of various forms of collaborative practices and "welfare capitalist" social partnerships (cf. Gooderham et al., 1999; Ferner, 2000). A number of other limitations to the study derive from the empirical study itself. First, the response rate in the Cranet survey was relatively low and this may have introduced selection biases. Second, we have applied cross-sectional data that make it impossible to distinguish the effects of diffusion of HRM practices on the one hand and the potentially hampering effects of inert national institutions on the other. Doing this would require longitudinal data. Third, the application of certain HRM practices does not indicate whether these are actually used with the same degree of intensity or rigor in dissimilar settings.

Fourth, our analysis is limited to US MNCs. Ferner (2000) has argued that due to the hegemonic position of the USA in the international economy and polity US MNCs are particularly prone to presume the one-way-best superiority of the American model. In other words our findings may apply to a lesser degree to MNCs with other national origins.

It is, moreover, important to note that we have been not been preoccupied with possible effects of the selected HRM practices on firm performance. A crucial and unresolved issue relates to which types of HRM practices that contribute to increasing or decreasing organizational effectiveness and performance and under what circumstances.

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TABLE 1
Scalability and reliability analysis of scales of calculative dimensions.
(Euronet-Cranfield data, net sample by listwise deletion among items, n=2573.
Items ordered by sample difficulties (means).

		Mean	**H$_{wgt}$***	**Corr.**
Calc	*Calculative scale, 10 items,* *(Cronbach's alpha=0.85)*	-	0.52	0.36
Ca8	Merit pay: manual	0.24	0.46	0.38
Ca7	Merit pay: clerical	0.29	0.59	0.56
Ca6	Merit pay: professionals	0.35	0.53	0.55
Ca5	Merit pay: managers	0.39	0.46	0.49
Ca4	Performance appraisals: manual	0.51	0.47	0.52
Ca10	Formal evaluation: details	0.57	0.43	0.48
Ca9	Formal evaluation of training	0.61	0.43	0.49
Ca3	Performance appraisals: clerical	0.61	0.59	0.68
Ca2	Performance appraisals: professionals	0.66	0.63	0.68
Ca1	Performance appraisals: managers	0.69	0.61	0.63

* Estimated by MSP: Mokken Scaling Program, H$_{wgt}$: Loevinger's coefficient of homogeneity, weighted.
** Estimated by SPSS Reliability, Mean: means of dichotomized items.
Corr.: average inter-item correlations for scales and corrected item--scale correlations for items.

TABLE 2.
Descriptive statistics for variables in the regression analysis, n=2769.

Variables with description		Min.	Max.	Mean	Std.
Calc	Scale for calculative HRM practices	0	100	51.043	30.439
Lnsize	The natural log of firm size (# employees)	1.39	15.78	6.2094	1.35516
Industry	Manufacturing (reference category)	0	1	0.389	0.488
	Construction	0	1	0.044	0.205
	Transport	0	1	0.047	0.211
	Banking and finance	0	1	0.084	0.278
	Personal services	0	1	0.094	0.292
	Other industries	0	1	0.342	0.474
Fmarket	fmarket Foreign markets, s6v10	0	1	0.494	0.500
Recent	recent Org established 1980-1999	0	1	0.209	0.407
Country	UK (reference category)	0	1	0.357	0.479
	Ireland	0	1	0.126	0.332
	Denmark/Norway	0	1	0.272	0.445
	Germany	0	1	0.165	0.371
	Australia	0	1	0.081	0.272
USS	1=US owned firm, 0= indigenous	0	1	0.109	0.312
USS*IR	USS by Ireland interaction	0	1	0.028	0.165
USS*DN	USS by Denmark/Norway interaction	0	1	0.011	0.104
USS*GER	USS by Germany interaction	0	1	0.014	0.116
USS*AUS	USS by Australia interaction	0	1	0.019	0.136

Min.: minimum value, Max.: maximum value, Std.: standard deviation

TABLE 3.
A multiple regression analysis of the scale measuring calculative HRM practices with dummy variables for countries. Euronet-Cranfield data, net sample by listwise deletion, n=2769.

Regressors with description		B	SE
Constant		39.426 ****	2.829
Lnsize	The natural logarithm of firm size	2.891 ****	.383
Industry	Manufacturing (reference category)		
	Construction	-1.754	2.505
	Transport	2.091	2.413
	Banking and finance	13.548 ****	1.877
	Personal services	.238	1.842
	Other industries	-0.984	1.276
Fmarket	Foreign vs. national markets	6.744 ****	1.109
Recent	Organization established 1980-1999	3.784 ****	1.217
Country	UK (reference category)		
	Ireland	-13.877 ****	1.842
	Denmark/Norway	-31.018 ****	1.324
	Germany	-18.254 ****	1.559
	Australia	7.609 ****	2.179
USS	1=US owned firm, 0= indigenous firm	6.718 **	2.680
USS*IR	Design variable for the USS by Country interaction: 1= US owned firm in Ireland, 0 = otherwise	11.219 ***	4.245
USS*DN	Design variable for the USS by Country interaction: 1= US owned firm in Denmark/Norway, 0 = otherwise	14.165 ***	5.445
USS*GER	Design variable for the USS by Country interaction: 1= US owned firm in Germany, 0 = otherwise	.881	5.078
USS*AUS	Design variable for the USS by Country interaction: 1= US owned firm in Australia, 0 = otherwise	2.848	4.831
	$R^2_{\text{whole model}}$	0.304 ****	
	$R^2_{\text{controls (1)}}$	0.093 ****	
	$R^2_{\text{country (2)}}$	0.197 ****	
	$R^2_{\text{uss, interactions (3)}}$	0.014 **	

B: metric regression coefficient, SE: the standard error of B. Statistical significance of B (two-tailed): • $p<0.10$, •• $p<0.05$, ••• $p<0.01$, •••• $p<0.001$.

R^2_{controls}, $R^2_{\text{country, uss}}$ and $R^2_{\text{interactions}}$ are marginal increments in the R^2 statistic by adding the regressors in the subscripts. The numbers in the parentheses indicate the order in which the variables were added to the model.
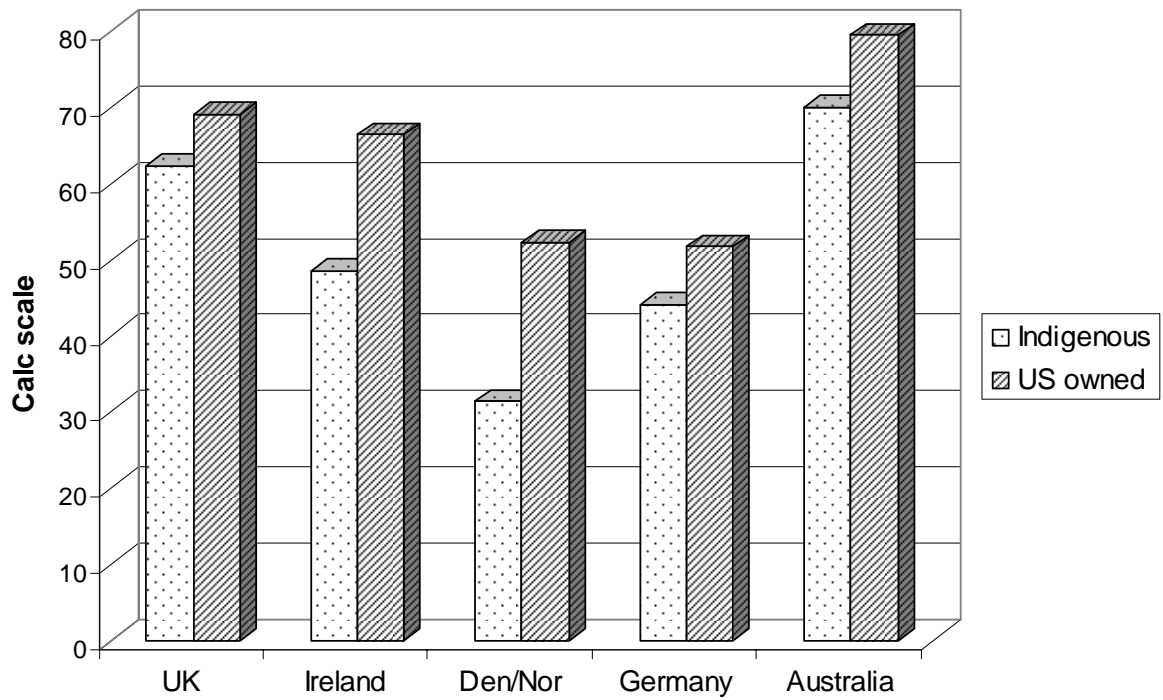
Figure 1. Use of calculative HRM practices in indigenous European and US subsidiaries in the UK, Ireland, Denmark/Norway, Germany and Australia. (Predicted values on the Calc scale are based on the regression analysis in Table 2 with the control variables set to their means.)