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ARTICLE INFO	Gjalt de Jong and Dut Van Vo (2010). The impact of the institutional environment on the autonomy of MNCs’ subsidiaries. *Problems and Perspectives in Management*, *8*(2)
RELEASED ON	Tuesday, 27 April 2010
JOURNAL	"Problems and Perspectives in Management"
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES
0	**0**	**0**

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The impact of the institutional environment on the autonomy of MNCs' subsidiaries

Abstract

The subsidiary is playing an increasingly important role in generating competitive advantage for MNCs. The key objective of this study is to empirically disentangle the underlying causal structure that determines the autonomy of subsidiaries. We argue that the division of decision-making authority between the headquarter and the operational unit primarily responds to the institutional contexts of both, the parent company and the subsidiary. This is because an MNC is a governance structure that operates affiliates in many and widely different institutional contexts. Our propositions are tested on a database that includes 263 European subsidiaries of 18 MNCs in 25 European countries. The empirical results support our institutional perspective and show that the subsidiary's autonomy is strongly associated with the global strategy of the parent firm and the national business system in which the affiliate is embedded. The results hold while controlling for various key characteristics of the parent firm and for the subsidiary.

Keywords: autonomy, subsidiaries, European multinationals, national business systems, national institutions.
JEL Classification: M16.

Introduction

Rapid changes in the nature of global competition have caused international managers to define new strategies for multinational corporations (MNCs). The relationship between the parent company and its subsidiary is becoming central to an understanding of the functioning of MNCs because subsidiaries play an increasing role in generating competitive advantages for the MNC. The autonomy of subsidiaries is at the center stage in this debate. A multinational company can be conceptualized as a network of exchange relationships among organizational units, including the headquarters and the different national subsidiaries, which are embedded in what Zaheer (1995) describes as the "meta-environment" or, more recently by George & Zaheer (2006) as the "geographic signature" (Zaheer, 1995; George & Zaheer, 2006). That is, MNCs operate in multiple national environments, each with its own path-dependent institutional characteristics and this differentiates MNCs from domestic firms (Dunning & Lundan, 2009; Rugman & Oh, 2009). In this study, we therefore present a first attempt to explain how variations in the home − and host country environments, next to and on top of parent company − and subsidiary characteristics, determine variations in the autonomy of subsidiaries. In so doing, we respond to the call for more interdisciplinary as well as more empirical work in this field (Paterson & Brock, 2002; Geppert & Williams, 2006).

A stream of relatively recent studies in organization science – following earlier work in the 1980s (Goehle, 1980; Hedlund, 1981; Garnier, 1982; White & Poynter, 1984; Gates & Egelhoff, 1986) and the 1990s (Jarillo & Martinez, 1990; Blaine, 1994; Birkinshaw & Morrison, 1995; Gnan & Songini, 1995; Birkinshaw & Hood, 1998) – focus on the analysis of the role of the subsidiary, in order to explain inter-organizational differences in MNC behavior and performance (Paterson & Brock, 2002; Varblane et al., 2005; Geppert & Matten, 2006). Several studies (Ferner et al., 2004; Dörrenbächer & Gammelgaard, 2006) have pointed out that the level of decision-making autonomy granted by MNCs to their subsidiaries varies strongly. That is, some MNCs allow their subsidiaries a great deal of decision-making independence while others assume tight control of the subsidiaries' activities. Furthermore, there is ample evidence that this strategy may change over time (Dörrenbächer & Gammelgaard, 2006). Gnan and Songini (1995), for instance, show that Japanese firms allow subsidiaries little decision-making freedom in the early stages of development, while there has been a significant relaxation of this position in recent years (cf. Dirks, 1995). Conversely, Blaine (1994) found that German-owned subsidiaries have lost important elements of their decision-making power. All in all, these studies point out that the relationship between the parent company and its foreign affiliates has become more important but also more complicated and sometimes even loaded with conflicts. Decision-making authority boils down to the essence of power. Given the increasing importance of subsidiary activities for headquarter performance the question of autonomy is omnipresent in MNC-subsidiary relationships (Takeuchi et al., 2008).

When reviewing the subsidiary literature, two broad conclusions can be drawn, at least. First, previous studies of subsidiary offer a helpful but somewhat scattered picture of the subsidiary's decision-making position. These studies can be classified into those that primarily focus on characteristics of the parent company (e.g., size, the level of product diversification) or of the subsidiary (e.g., size, performance, ownership). For example, it has been

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argued that the size of the parent company or the level of its product diversification matters for autonomy (Johnston, 2005). In a similar vein, the size of the affiliate, its performance and extent of ownership are related to its autonomy as well (Johnston & Menguc, 2007). In comparison to the various firm characteristics, however, there has been much less analysis concerning the effects of the local institutional environment on subsidiary autonomy. Hence, we specify hypotheses that detail effects on subsidiary autonomy of home- and host-country environments. Together with parent and subsidiary characteristics we integrate them into one framework. Our integrative research model allows to disentangle how the division of decision-making authority between the headquarter and the operational unit responds to this complex set of factors. Herein lies the first contribution of our paper.

Ample case-study and survey evidence of autonomy is available. Case studies help to identify and explore processes, and for that reason subsidiary studies have used this method to investigate particular autonomy-related events. Using case studies, researchers revealed insights into the origin and flow of headquarter-subsidiary decision-making processes. Notwithstanding the importance of case studies, they focus on single events and therefore lack the scope needed to generalize findings, determine correlations and discuss causalities. The scarce but promissory survey offers interesting albeit no univocal evidence for either of the given explanations (e.g., Varblane et al., 2005). Due to differences in measures and samples survey results are difficult to compare. In particular, the effects of parent-company characteristics on autonomy have been mixed and no clear understanding for these determinants has yet been developed. The evidence for the impact of subsidiary characteristics on their autonomy is somewhat more robust and shows a little more consistency than parent-company characteristics.

Our second contribution concerns the empirical test of our integrated framework. This study intends to move beyond case-study and survey literature and use secondary data-sources (that is, the Amadeus database) to collect information for a sample of companies and their environments. We collected data from 263 subsidiaries of 18 MNCs in 25 European countries. We believe that an empirical approach is valuable in its own right. Our European focus aims at complementing existing work that analyzes the relationship between US MNCs and their subsidiaries. In addition to that, the majority of the European studies on the topic generally include one or two specific European countries (for example, Hedlund, 1981; Jarillo & Martinez, 1990; Taggart, 1997; Taggart & Hood, 1999). Our international coverage aims at going beyond the bilateral perspective. In so doing, we present three other novel twists to the literature. First, we present a relatively new proxy for the autonomy of the subsidiary. Based on the subsidiary literature, we assembled a list of ten different business functions and other activities that each require management attention of subsidiaries and/or headquarters – i.e., R&D, manufacturing, marketing, sales, market scope, network activities, outsourcing, cooperation, export-import activities and the organization of the subsidiary establishment (see also, for example, Jindra et al., 2009). We used detailed information available in the Amadeus database for each of these ten dimensions to create our proxy for the overall autonomy of the subsidiary. Second, we are able to address the overall, global strategy of the MNC. The headquarter is located in a particular national business context or system. We will analyze whether, and if so, how, this national context determines the amount of autonomy granted to subsidiaries. Third, we also include measures for the institutional environments of the host countries, i.e., the particular context in which the subsidiary operates. The autonomy decision is not only determined by home country contexts but also by national business practices in host country contexts of MNCs. One reason for this is 'the relative weakness of international institutions' (Whitley, 1999) compared with the institutional framework of the nation-state, which makes it very unlikely that national business practices will lose their influence over most companies operating internationally. Although our research method has limitations – which we will elaborate on in the discussion section – the data have enabled us to develop a good insight into the role of institutional environments in the autonomy of subsidiaries.

The remainder of the paper is organized as follows. Section 1 discusses the theoretical background and presents the model. Following this, the research methodology is summarized in Section 2. Section 3 presents the empirical results and associated discussion. Finally, the conclusion is provided in the final section.

1. Theory and hypotheses

Our key proposition is that subsidiary autonomy is determined by the nature of the local institutional environment in which the headquarter of the MNC and the subsidiary is embedded. Institutional theory argues that, in order to survive, organizations need to gain legitimacy that is achieved through isomorphism with salient institutions. Firms will tend to conform to the rules and belief systems prevailing in their environment.

As said, since the MNC is situated in both its country of origin and, through its subsidiaries, in a number of other countries, it operates under multiple, possibly conflicting, institutional pressures. In what follows we explain how different home- and host country environments determine the autonomy of subsidiaries.

1.1. Overall MNC strategy. Our first variable captures the impact of the home country environment on subsidiary autonomy. Home country environments determine the overall strategy of the MNC. Thus, the decision by, e.g., a US MNC in regard to exerting centralized control of a subsidiary is motivated by deeply held assumptions concerning appropriate goal-setting that arise out of the parent company's embeddedness in a particular (USA) home country institutional setting.

The overall strategy of an MNC indicates whether a multinational firm imposes a centralized, global strategy or a negotiated decentralized strategy on its subsidiaries. It has been argued that the organizational structure of global firms inevitably follows the Anglo-Saxon model of capitalism with a multidivisional organizational structure and the main focus on the shareholder value (Whitley, 1999; Bakan, 2004). MNCs increasingly use shareholder value as a key measure of corporate performance in their business unit and, it is argued, the more global company operations become, the more likely companies are to use similar tools, such as downsizing, to achieve performance goals. Furthermore, the emergence not only of global corporate structures but also of a global corporate culture, replacing national home and host-country identities is predicted. The development of global mindsets (Gupta & Govindarajan, 2002) and transnational management mentalities (Bartlett & Ghoshal, 1989) are understood as crucial management tasks in the making of the global firm. Divergent interests and local power resources of key subsidiary managers and employee representative bodies are played down or are ignored altogether by this discourse (Geppert & Clark, 2003).

In line with Soskice (1999) we take into account that the production regimes of advanced economies can be classified into two main patterns, namely 'coordinated market economies' (CMEs) and 'liberal market economies' (LMEs) (cf. Hall & Soskice, 2001). Firms operating in the former context are regarded as significantly more institutionally constrained than those in the latter, in the sense that they operate within contexts whose legal frameworks and systems of industrial relations constrain managers' autonomy in applying market-driven or technologically contingent management practices. Thus, the MNC subsidiaries in CME countries across the world have a local rather than a global focus and thus are less subject to centralized control which impairs their ability to respond to local market pressures. For example, German MNCs have recently embarked on a cautious internationalization process but still follow a 'local responsiveness' strategy of local differentiation among their foreign subsidiaries. Geppert and Williams (2006) argue that headquarter management representatives in Germany emphasize that subsidiaries worldwide have relative autonomy in running their own operations. Moreover, Lane (1989) shows that German and Japanese MNCs allocate more resources and responsibilities as well as organizational and financial autonomy to their subsidiaries to develop networks in host countries similar to those existing in German and Japanese industry. In short, we expect that international corporations that are in favor of imposing decentralized strategies on their subsidiaries, such as German, Japanese and Swedish MNCs, tend to respect the autonomy of local subsidiaries. In contrast, MNCs in Anglo-Saxon economies like to impose their standardized global strategies on their subsidiaries. Divergent interests and the local power resources of key subsidiary managers and employee representative bodies are played down or ignored. Therefore, we propose the following hypothesis:

Hypothesis 1: MNCs located in CMEs will grant more autonomy to their subsidiaries than MNCs located in LMEs.

1.2. National business systems. Our second hypothesis concerns the degree of institutional embeddedness of the subsidiaries in the host country. The degree of institutional embeddedness of the subsidiary in the host country represents whether the subsidiary operates in a country with a highly or weakly integrated national business system (Geppert & Williams, 2006). Nationally specific industrial orders and societal effects may create alternative paths for organizing businesses and management. The degree of embeddedness, interdependence, cohesion and integration of institutions and business organizations in the Anglo-Saxon model of capitalism is much lower than in other capitalist countries, such as Germany and Japan (Benito et al., 2003; Ferner et al., 2004). CMEs such as Germany or Japan have a highly integrated national business system whose key characteristic is that major institutions are more interdependent. For example, they have inter-linkages between national infrastructure, corporate strategy and firm behavior as a result of institutional complementarities. The strategic interaction is reflected by dense networks that connect the managers and technical personnel inside a company to their counterparts in other firms. The internal structure of the firm is based on collaborative and cooperative modes of action (Hall & Soskice, 2001). Moreover, these economies have developed enterprise-based

unions in which labor union and government agencies have very strong influences on firms, such as participating in firm decision-making. Therefore, MNCs may face several difficulties in implementing global practices in subsidiaries located in these countries. However, the LMEs of Anglo-Saxon countries have low-level integrated national business systems (Whitley, 1999). They have a low level of commitment and cooperation between firms and between employers and employees, and a high level of mobility of operations. The main characteristics of these LMEs are a lack of integration or systematic coordination of activities, absence of legal constraints on management's use of labor resources and weak rights of employee representative bodies. Hence, MNCs are easily able to apply global strategy in subsidiaries located in these economies. As a result, we propose the following hypothesis:

Hypothesis 2: The degree of institutional embeddedness of subsidiaries in the host-country environment negatively affects the autonomy level of the subsidiaries granted by an MNC.

2. Methods

2.1. Data collection and sample. The data used to estimate the theoretical model are derived from Amadeus. Amadeus is the most appropriate single-source firm-level database for our research because it is one of the most comprehensive pan-European databases containing detailed information of many public and private companies in virtually all European countries. Overall, our database includes a wealth of information that represents a substantial amount of economic activity. The information derives from financial reports of the subsidiaries and parent companies for 2005 including their product lines and trade activity description. This not only allowed us to determine our key construct (i.e., subsidiary autonomy) but also to develop measures for headquarter and subsidiary characteristics that we included as control variables in our model (see below). We selected 263 European subsidiaries of the 18 largest MNCs from 25 European countries (including, for example, Germany, the United Kingdom, Denmark and Sweden). The data for these large companies allow to construct datasets with complete observations (cf. Rugman & Oh, 2009). Amadeus also specifies the geographic location of the MNC itself and all its subsidiaries which allows to determine the peculiarities of the particular home and host country environments in question.

2.2. Measures. The dependent variable is the degree of subsidiary autonomy. Our data-collection approach does not allow to directly measure decision-making autonomy of subsidiary managers versus the headquarter as in a case-study or a survey-based research. Nonetheless, we have been able to construct a proxy for subsidiary autonomy based on the following three steps. First, we carefully reviewed the definitions and measures of subsidiary autonomy employed in leading subsidiary studies – i.e., Goehle (1980), Hedlund (1981), Garnier (1982), White & Poynter (1984), Taggert (1997), Vachani (1999), Varblane, et al. (2005), and Johnston & Menguc (2007). Hence, we take the theoretical and empirical achievements in the leading subsidiary literature as the point of departure for our proxy of subsidiary autonomy. This review resulted in a list of ten decision dimensions that primarily relate to business functions of subsidiaries – such as R&D, manufacturing, marketing and sales – but also include other potentially important management activities such as outsourcing, export-import or the organization of the subsidiary establishment self (cf. Jindra et al., 2009)[1]. Second, based on the Amadeus database we determined whether or not a subsidiary performs a particular business function or activity. Thus, we created a dummy variable for each of the ten dimensions, that is, R&D = 1 if the subsidiary undertakes R&D activities, and 0 otherwise; Manufacturing = 1 if the subsidiary undertakes manufacturing activities, and 0 otherwise; Marketing = 1 if the subsidiary undertakes marketing activities, and 0 otherwise; Sales = 1 if the subsidiary undertakes sales activities in the domestic market, and 0 otherwise; Market scope = 1 if the subsidiary serves foreign markets, and 0 otherwise; Network = 1 if the subsidiary engages in network activities within the MNC, and 0 otherwise; Outsourcing = 1 if the subsidiary engages in outsourcing activities, and 0 otherwise; Cooperation = 1 if the subsidiary cooperates with external organizations, and 0 otherwise; Export-import = 1 if the subsidiary engages in export and/or import activities, and 0 otherwise; Subsidiary establishment = 1 if the subsidiary has its own subsidiary, and 0 otherwise.

Third, we summed the scores of the ten different dummies into one overall construct. We used this construct – that ranges from 0 to 10 – as the proxy for the degree of subsidiary autonomy. There are three additional reasons that support the use of this construct as the overall proxy for subsidiary autonomy rather

[1] White & Pointer (1984), for example, classify the autonomy of a subsidiary in three categories: market scope, product scope and value added scope. Market scope is the range of geographic markets available to the subsidiary, with market scope being broad when a subsidiary serves not only a domestic market but also foreign markets. Product scope is the latitude exercised by a subsidiary's business with regard to product line extensions and new product areas. The value added scope of the subsidiary will be limited when economies of scale are large, tariffs are low and customer acceptance of a globally standardized product is high. Therefore, value added scope refers to the range of ways in which a subsidiary adds value, whether through development, manufacturing or marketing activities. Value added scope is broad when the subsidiary is not limited to the manufacturing or marketing of established products but also has the capability to develop new products and processes.

than, e.g., individual dimensions seperately. Firstly, it stands to reason that the more business functions or activities a subsidiary performs, the higher its autonomy will be. A wide range of business functions implies greater managerial complexity and specialization opportunities for a subsidiary which will be translated in greater autonomy. Secondly, we performed exploratory factor analysis and cluster studies on the ten dimensions. These results showed that no sub-dimensions of autonomy exist. Thirdly, we estimated logit and probit models for each separate dimension. It might be that a subsidiary receives autonomy for a single dimension and not for (all) others which is then masked in a summed scale. These estimates offered almost no significant results. The same applies to models in which we – despite the factor and cluster analyses – grouped dimensions into two or three separate scales for autonomy. Again, virtually no significant results appeared. Taken together, this builds confidence in our proxy for subsidiary autonomy[1].

We measured the first explanatory variable – overall strategic approach of a multinational corporation – with a dummy variable. As mentioned above, studies in the national business system approach make a distinction between LMEs (e.g., the United Kingdom and Ireland) and CMEs (e.g, Germany, the Netherlands, Sweden or Norway). The classification of the countries derives from Hall and Sockice (2001). We code 1 if the subsidiary belongs to a multinational corporation whose headquarters are located in a CME, and 0 otherwise (hence, if the subsidiary belongs to a multinational corporation whose headquarters are located in an LME). We measured the second explanatory variable – the degree of institutional embeddedness of the subsidiary in the host country – with a dummy variable. We code 1 if the subsidiary is located in a country with a low degree of institutional embeddedness, and 0 otherwise.

2.3. Control variables. We include two sets of control variables in our model. Although our sample includes the largest European MNCs there is, of course, variation in MNC characteristics that need to be accounted for. The first set of control variables accounts for MNC characteristics, in particular the degree of product diversification and company size (Garnier, 1982; Gates & Egelhoff, 1986; Vachani, 1999). First, MNC decentralization can be positively associated with product diversification[2]. That is, the greater the degree of product diversification of MNCs, the more the subsidiary management by MNCs becomes complex and more difficult to control, enabling their subsidiaries to assume more autonomy (Gates & Egelhoff, 1986; Vachani, 1999). The degree of product diversification is measured by the number of products to be counted through product codes from the annual reports of the subsidiaries. Second, increasing size of the parent company may lead to an increase in the decision-making authority of local managers because size leads to more structuring of activities which then facilitates autonomy (Goehle, 1980; Hedlund, 1981; Garnier, 1982; Gates & Egelhoff, 1986). The size of multinational firms is measured by the total number of employees of the MNC.

The degree of decision-making latitude allowed to subsidiaries is influenced by certain of their characteristics. The second set of control variables accounts for these, in particular subsidiary age, economic performance, extent of ownership and subsidiary size. First, we assert that after several years of operation, subsidiaries are allowed more autonomy than those with little experience because subsidiaries that have long been dependent on the multinational firm will have well-established connections with local stakeholders and extensive local experience. In such cases the risk of granting greater autonomy seems to be low. Thus, older subsidiaries are expected to be more autonomous than subsidiaries that have had a shorter affiliation with their foreign parent company (Taggart & Hood, 1999; Young & Tavares, 2004). The age of the subsidiary is measured as the number of years since the subsidiary was founded. Second, it can be expected that successful local subsidiary managers will be granted more decision-making authority than those who are less successful. Good company performance by the subsidiary within an MNC can provide local managers with greater bargaining power, even when the company seeks to use an imposed and centralized approach to develop an increasing global standardization of local practices. Subsidiaries with poor performance do not have the power to resist the implementation of an MNC's global strategy (Geppert & Williams, 2006). The economic performance is measured as the subsidiary's profit rate (in terms of a percentage) relative to that of the whole MNC, representing whether the subsidiary performs better or worse than any other across the whole MNC. Third, the extent of subsidiary ownership cannot be ignored in our thinking about affiliate autonomy. It is defined as the equity holding authority of an owned subsidiary as granted by the parent company. In cases of majority ownership, there are more chances of control and direction than in joint venture and minority ownership situations where the

[1] Seperate tables are available from the first author upon request.

[2] In a similar vein, Bartlett & Goshal (1989) relate decision making power to the nature of the product. This information, however, was not available in the Amadeus dataset.

interests and resistance of local partners have to be taken in consideration. Furthermore, a majority ownership reflects a commitment of resources and a governance mechanism to control spill-over risks of firm-specific knowledge that creates sustainable competitive advantages (Männik et al., 2005; Chan & Makino, 2007). The extent of ownership of subsidiary is measured by the percentage of the local shareholders' ownership of the subsidiary. Fourth, the size of the subsidiary is important because increasing size will offer increasing tangible (e.g., capital) and intangible resources (e.g., managerial talent and knowledge) that the MNC can use to obtain sustainable competitive advantages provided that they are inimitable, rare, causally ambiguous and unique (Dierickx & Cool, 1989). We account for an inverted U-shaped relationship between subsidiary size and autonomy because as a small subsidiary builds up its resources, it becomes less strongly tied to the MNC and its autonomy increases. However, when a subsidiary becomes larger its role within the MNC becomes greater and the parent company increasingly controls its decision-making authority (Hedlund, 1981; Johnston, 2005; Johnston & Menguc, 2007). The size of the subsidiary is measured in terms of the number of employees of the subsidiary.

The final control variable in our model is the relatedness of the home and the host countries because we focus on European MNCs. It is defined in terms of the level of similarity between the business environment in the parent company's country of origin and the country where the subsidiary is located. In fact, if this similarity level is high, the head office managers of MNCs are able to use their knowledge to control foreign subsidies, while head offices depend on the local knowledge of foreign subsidiary managers in operating a local business where the similarity is low (for example, Erramilli & Rao, 1990; Edwards et al., 2002). Moreover, the external environment and the host-country environment determine the role of the MNC subsidiary, including its autonomy (Benito et al., 2003). Thus, we would expect that if the home and the host countries have similar business environments, the autonomy of the subsidiary will be low, if there is little similarity the autonomy will be high. The relatedness of the host and home countries is measured by a dummy variable. We code 1 if the home and the host countries belong to different national business systems (i.e., country A is a LME and country B is a CME and vice versa), and 0 if both the home and the host countries are highly integrated NBSs or the inverse (i.e., countries A and B are both LMEs or both CMEs). Again, the classification of the countries is derived from Hall and Soskice (2001).

2.4. Negative binomial regression. We apply negative binomial regression techniques to estimate the significance or non-significance of the hypothesized determinants of subsidiary autonomy. The dependent variable is a discrete counting measure. Hence, we start from the assumption that autonomy follows a Poisson distribution. The Poisson model, however, imposes the restriction that the conditional mean of the dependent variable is equal to its variance. The negative binomial regression model generalizes the Poisson model by introducing an individual unobserved effect into the conditional mean, thus allowing for over-dispersion in the data (i.e., variance exceeding the mean). Extensive experimentation using both approaches revealed that the Poisson process was not suitable for our dataset. Therefore, we only report and discuss the results from the negative binomial model. We used the robust Quasi-Maximum Likelihood (QML) estimation procedure implemented in E-views, since this produces more consistent estimates of the parameters of a correctly specified conditional mean than the Maximum Likelihood (ML) estimation procedure does, even if the distribution is incorrectly specified (cf. Santos Silva & Tenreyro, 2006)[1]. Finally, it is worthwhile to mention that, strictly speaking, the economic meaning of the estimated parameter coefficients in negative binomial models are difficult to interpret because of the non-linear relationships between the explanatory variables and the dependent variable. We therefore calculated the marginal effects at the mean values of the explanatory variables. These marginal effects can be used to obtain the economic meaning of the explanatory variables (see Sanders & Carpenter, 1998)[2].

3. Empirical results

The descriptive statistics and Pearson correlations are reported in Table 1. The hierarchical regression results are provided in Table 2, adding the overall MNC strategy and the institutional variables (Model 2) to the baseline specification (Model 1).

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[1] We also applied OLS estimation because most empirical studies in the field apply OLS. The regression results for both estimation methods are virtually the same. In fact, the estimated coefficients of the explanatory variables from the OLS model are equal to three times those of the negative binomial regressions. This is perfectly in line with the statistical expectations for these models. Our empirical results are robust and do not depend on the statistical method that is used. Given the scale of the dependent variable we discuss the results with reference to the negative binomial regression estimates.

[2] The Poisson regression model is: $\hat{Y}_i = e^{\beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \beta_3 X_{i3} + \beta_4 X_{i4} + \beta_5 X_{i5} + \beta_6 X_{i6} + \beta_7 X_{i7} + \beta_8 X_{i8} + \beta_9 X_{i9} + \beta_{10} X_{i10}} + \varepsilon$.

Taking the logarithm of both sides, we have:

$LnY_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \varepsilon$.

We estimated the coefficient of ith variable through derivative this equation with respect to i^{th} X, and thus obtained:

$\hat{\beta}_i Y = \frac{\delta Y_i}{\delta X_i}$ with the elasticity $\hat{\beta}_i X_i = \frac{\delta Y_i}{\delta X_i} \frac{X_i}{Y_i}$.

Table 1. Descriptive statistics and correlation coefficients (n = 263)[1]

	Variable	Mean	S.d.	1	2	3	4	5	6	7	8	9	10	11
1.	Degree of subsidiary autonomy	3.25	0.95	1.00										
2.	Overall strategic approach of MNCs	0.70	0.46	0.13	1.00									
3.	Degree of product diversification	9.08	7.05	-0.11	-0.09	1.00								
4.	Degree of institutional embeddedness	0.14	0.08	-0.18	-0.04	0.11	1.00							
5.	Parent-company size (10,000)	0.73	0.44	0.14	-0.35	0.04	-0.01	1.00						
6.	Subsidiary age (log)	3.15	0.81	0.58	0.07	-0.09	-0.07	0.10	1.00					
7.	Economic performance	15.2	62.6	0.06	0.10	-0.07	-0.02	-0.13	-0.01	1.00				
8.	Extent of ownership	0.91	0.24	0.12	-0.20	-0.01	-0.00	0.14	-0.09	-0.30	1.00			
9.	Subsidiary size (log)	6.55	10.0	0.15	-0.10	0.12	0.12	0.12	0.10	-0.08	0.09	1.00		
10.	Subsidiary size squared	143.39	434.88	0.12	-0.12	0.10	0.07	0.10	0.10	-0.06	0.08	0.93	1.00	
11.	Relatedness of home and host countries	0.44	0.50	0.04	-0.30	0.03	-0.34	0.17	-0.04	-0.08	0.16	-0.04	-0.05	1.00

Notes: correlations above 0.12 are significant at $p < 0.05$.

Table 1 shows that several variables are significantly correlated. Most importantly, our proxy for autonomy is positively correlated with most of the explanatory variables. This is a first indication that a change in subsidiary autonomy is simultaneously determined by various factors. Table 1 shows that the absolute correlation coefficient values are relatively low (the highest one being 0.35, which shows a correlation between overall strategic approach and size of the parent company). It can be concluded that there is no multicollinearity between any pair of independent variables (this is also confirmed by the auxiliary regressions: the R-squared values of the auxiliary regressions are relatively low). The other regular tests to obtain reliable estimates reported satisfactory empirical results, i.e., there is no heteroskedasticity, multicollinearity or serial autocorrelation for the (OLS) model. The regression results are therefore reliable and unbiased.

Table 2. The determinants of subsidiary autonomy of European MNCs (n = 263)[1]

	Model 1	Model 2	Marginal effect
Constant	0.24***	0.18	
	(0.11)	(0.14)	
Main effects			
Overall strategic approach of MNC		0.12***	0.34***
		(0.04)	(0.12)
Degree of institutional embeddedness		-0.09**	-0.31**
		(0.04)	(0.11)
Control variables: MNC characteristics			
Degree of product differentiation	-0.003	-0.01	-0.03
	(0.002)	(0.01)	(0.01)
Company size (10,000)	0.18	0.41*	1.38*
	(0.21)	(0.23)	(0.70)
Control variables: subsidiary characteristics			
Subsidiary age	0.21***	0.20***	0 .65***
	(0.02)	(0.02)	(0.05)
Economic performance	0.001***	0.01***	0.002***
	(0.002)	(0.02)	(0.001)
Extent of subsidiary ownership	0.24***	0.26***	0.86***
	(0.07)	(0.07)	(0.21)
Subsidiary size (log)	0.008**	0.01**	0.03**
	(0.004)	(0.04)	(0.01)
Subsidiary size (log) squared	-0.003*	-0.01*	-0.03*
	(0.000)	(0.07)	(0.000)
Control variables: institutional relatedness			
Relatedness home – host countries	0.02	0.01	0.03
	(0.02)	(0.03)	(0.10)
Model summary			
Adjusted R-Square	0.39	0.43	
Log likelihood		-606.3	

Notes: (1) *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. White's heteroscedasticity – consistent standard errors are given in parentheses.

Table 2 reports a very satisfactory fit for both models. Also, the adjusted R-square improves for Model 2 compared to Model 1 justifying the inclusion of our key variables. The significance levels for the parameter estimates in Model 2 and for the marginal effects are the same. Concerning the main effects, the empirical results strongly support *Hypothesis 1* which predicts that the home country environment of multinational firms shapes their overall strategy concerning the autonomy of subsidiaries. MNCs that are embedded in CMEs are more likely to grant autonomy to their subsidiaries than MNCs in LMEs ($p < 0.01$). *Hypothesis 2* receives convincing support from our data ($p < 0.05$). This result emphasizes the important role played by the national business environment within the host country, determining that the degree of subsidiary autonomy is higher for subsidiaries located in highly integrated NBSs. Finally, the results for the control variables indicate that in particular the size of the MNC ($p < 0.10$), the age of the subsidiary ($p < 0.05$), its economic performance ($p < 0.01$) and the extent of ownership ($p < 0.01$) increase subsidiary autonomy. This is in line with our expectations. Table 2 also confirms the hypothesized non-linear relationship between subsidiary size and autonomy (with $p < 0.01$ for the main term and $p < 0.05$ for the squared term).

Discussion and conclusions

Studies on subsidiaries have evolved over time with the research strategy becoming specifically concerned with headquarter-subsidiary relationships and subsidiary roles. Consequently, an important aspect of recent research is the degree of subsidiary autonomy, which should be considered much more because 'the HQ is not always disposed to concede' (Johnston, 2005, p. 97). Our results emphasize that the institutional environment in combination with parent-company and subsidiary characteristics simultaneously determine the autonomy of subsidiaries. Although individual characteristics have been addressed elsewhere, ours is one of the first that explicitly focuses on the institutional environment and that offers an integrative perspective of subsidiary autonomy. To the best of our knowledge, the overall strategy of the MNC and the host country context have not been investigated, at least not explicitly, in other studies of subsidiary autonomy.

Indeed, in CMEs, education and training systems encourage initial vocational training of young people. Due to skill-specific training systems, these countries have competitive advantages in improving and upgrading technology in existing high-technology fields (such as machinery industries), but have disadvantages in newer fields such as electronics, biotechnology and new technology. In the machinery industries there is a diversification of consumer needs across markets, which encourages producers to diversify their products in order to satisfy the demand of particular local markets. Thus, the subsidiaries of MNCs in CME countries across the world have a local not a global focus and are therefore subject to decentralized and negotiated control. The head office management representatives in these MNCs are in favor of respecting the autonomy of local subsidiaries because of their understanding of local markets. By contrast, in LMEs, education and training systems emphasize general education, discourage long-term initial vocational training and encourage subsequent incremental skill acquisition, especially for those with sufficient general education. Thus, these countries have comparative advantages in new fields that involve radical innovation such as electronics, software and biotechnology. One of the requirements for the development of new fields involving radical innovation is centralized control by top management because it allows firms to respond quickly to rapid and unpredictable changes in technology and market demand. Moreover, the products in these fields are mostly standardized across the world, so MNCs in these countries are likely to have a global, not a local focus. Therefore, the autonomy of subsidiaries of such MNCs is not appreciated. Consequently, MNCs (for example, German, Japanese and Swedish) applying decentralized and negotiated strategies to their subsidiaries are in favor of granting much autonomy to their subsidiaries, while MNCs (for example, British, American) applying centralized strategies to subsidiaries like to restrict the autonomy of their affiliates. Additionally, our results also reject the argument of 'global convergence' which suggests that the organizational structures of global firms will inevitably follow the Anglo-Saxon model.

The present paper also points out the critical role of the local host country institutional environment in determining the ability of local managers and representatives to shape the implementation of the global strategies of MNCs. First, most of the business systems in CMEs are highly integrated (Hall & Soskice, 2001). In these countries, there are strong inter-linkages between firms as well as between firms and other organizations, such as labor unions and government agencies. For example, firms are significantly involved in the education system, and labor unions and several government agencies are involved in the decision-making processes of firms (Streeck, 2002). Therefore, MNCs face several difficulties in implementing

local strategies for their subsidiaries in these countries, and thus they grant a greater degree of autonomy to the subsidiaries (Geppert & Williams, 2006). Second, by contrast, LMEs appreciate the freedom of firms and encourage the competition between firms, thus the inter-linkages between firms seem to be absent and the role of labor unions and government agencies in firm activities is passive. Therefore, MNCs are easily able to impose global strategies on their subsidiaries in these countries, thereby resisting the autonomy of the subsidiaries. The result also rejects the argument of Ohmae (1990) and others, which assumes that MNCs are becoming 'placeless', as national identity is replaced by the commitment to a single unified global mission in global corporations (Ohmae, 1990). This study suggests that MNCs should have distinctive strategies for different subsidiaries. Indeed, subsidiaries in highly integrated NBSs should be granted more autonomy than those in NBSs with low levels of integration. This finding provides a turning-point in the process of examining the determinants of subsidiary autonomy.

Our results for the control variables are consistent with other empirical studies on subsidiary autonomy. This provides confidence in our research method in our measure of subsidiary autonomy. While some previous results have provided inconclusive and/or no significant results, none have contradicted the positive relationship supported by the present study. For instance, a significant positive relationship between the degree of autonomy and the parent-company size coincides with the findings of Garnier (1982) and Männik et al. (2005), while Gates & Egelhoff (1986) found a mixed relationship to the different centralization scales, and the findings of Hedlund (1981) were inconclusive.

We would like to mention that the findings of this paper are consistent with the 'sociopolitical' approach which emphasizes the role of the power, politics and strategic choices of local management in effecting the implementation of the global strategies of MNCs. First, the performance of a subsidiary is positively associated with its autonomy. In fact, the outstanding performance of a subsidiary provides its managers with huge bargaining power, which allows them to actively resist the imposition of global strategies by the parent firm and protect local practices (cf. Geppert & Williams, 2006). Second, the size of the subsidiary is positively associated with its autonomy at the first stage. In fact, parent firms suffer various difficulties in directly controlling their large subsidiaries (Taggart & Hood, 1999) because larger subsidiaries usually reside in large markets and engage in several complex activities, such as R&D or innovation. This can be interpreted as a threshold point at which the subsidiary begins to establish greater decision-making autonomy and eventually loosens its dependence on head office. However, if a subsidiary grows too large with respect to the parent company, the latter will restrict the decision-making authority of the subsidiary. Thus, absolute subsidiary size and autonomy have an inverted U-shaped relationship which coincides with the suggestions of MNC studies by Hedlund (1981) and Johnston and Menguc (2007).

Finally, although the effect of relatedness of the home and host countries on degree of subsidiary autonomy is suggested by several previous studies, the present findings do not support this argument. Thus, for this paper, the difference in business environments between the parent company's country of origin and the country where the subsidiary is located is not a determinant of subsidiary autonomy. The possible explanation of this is that due to the rapid development of information technology, head office managers are able quickly to learn the characteristics of foreign national business systems, even though the foreign NBSs are very different from those in the parent company's country of origin. Therefore, this seems not to be a vital factor forcing head office managers to grant more autonomy to subsidiaries.

Limitations and future research. There are certain limitations to this study and hence its findings. Since an in-depth examination of such a complex research topic involved a large number of variables, only European MNCs were included in this study. Consequently, conclusions on the locus of decision-making values can only be drawn relative to European samples. It cannot be assumed that all MNCs will present the same or even similar characteristics in terms of decision-making. In addition, this paper employed a cross-sectional dataset (in the year 2005) which raises limitations in relation to the generalization of the results. Birkinshaw (1996), for instance, developed the so-called 'mandate life cycle framework' to describe the broad change in the roles of subsidiary units in MNCs. In this life-cycle framework, the role of a subsidiary changes across three periods: mandate gain, mandate development and mandate loss. Therefore, due to the changing role of subsidiaries over time, future research may apply panel data or time series in order to test the dynamics in the relationships between MNCs and subsidiaries. The autonomy of subsidiaries may also vary across developmental levels of foreign countries in which subsidiaries are located. For example, according to James and Anthony (1995), MNCs are more important for overall economic activity when the host and home countries are more similar in incomes, relative factor endowments and techno-

logies. This means that an MNC from a developed country would have more room to develop in foreign countries with high development levels than in those with low development levels. Thus, the subsidiaries of this MNC found in developed countries would be granted more autonomy than those in developing countries. However, this paper does not make a distinction with respect to the level of autonomy found in subsidiaries existing in developed as opposed to developing countries, nor does it examine which of the decision-making powers granted by MNCs are the most critical. These limitations provide an opportunity for further research.

Concerning national business systems, according to Soskice (1999), along with the two production models mentioned in the study – LMEs and CMEs – there is a third quite different model. This is a 'state "business-elite coordinated" market economy'. This model is differentiated from the others in terms of the nature of business coordination. Here much business coordination takes place through networks of elite business leaders whose careers have interpenetrated both the public and the private sectors, and who include senior civil servants. Thus, in this type of coordination, the state may be directly involved with individual companies. In addition, the author argued that within this group of economies there were initially two models, 'centralized egalitarian' and 'flexibly coordinated', characterized by egalitarian, centralized wage-setting procedures. This would influence the degree of autonomy granted to subsidiaries by their MNCs. However, our study only observes two production models – LMEs and CMEs – in determining the autonomy of a subsidiary. The empirical results may change with the inclusion of these business characteristics in the research design. Further research should take into account these additional NBS groups.

References

1. Bakan, J. (2004). *The corporation: The pathological pursuit of profit and power*. London: Constable & Robinson.
2. Bartlett, C.A. & Ghoshal, S. (1989). *Managing across borders: The transnational solution*. Boston, MA: Harvard Business School Press.
3. Benito, G.R.G., Grogaard, B., & Narula, R. (2003). Environmental influences on MNC subsidiary roles: Economic integration and the Nordic countries. *Journal of International Business Studies*, 34(5): 443-456.
4. Birkinshaw, J. (1996). How multinational subsidiary mandates are gained and lost. *Journal of International Business Studies*, 27(3): 467-495.
5. Birkinshaw, J. & Hood, N. (1998). Multinational subsidiary evolution: Capability and charter change in foreign owned subsidiary companies. *Strategic Management Journal*, 23(4): 773-795.
6. Birkinshaw, J.M. & Morrison, A.J. (1995). Configurations of strategy and structure in subsidiaries of multinational corporations. *Journal of International Business Studies*, 26(4): 729-753.
7. Blaine, M. (1994). Comparing the profitability of firms in Germany, Japan, and the United States. *Management Interntional Review*, 34(2): 125-148.
8. Chan, C.M. & Makino, S. (2007). Ligitimacy and multi-level institutional environments: Implications for foreign subsidiary ownership structure. *Journal of International Business Studies*, 38(4): 621-638.
9. Dierickx, I. & Cool, K. (1989). Asset stock accumulation and sustainability of competitive advantage. *Management Science*, 35(12): 1504-1511.
10. Dirks, D. (1995). The quest for organizational competence: Japanese management abroad. *Management International Review* 35: 75-90.
11. Dörrenbächer, C. & Gammelgaard, J. (2006). Subsidiary role development: The effect of micro political headquarters-subsidiary negotiations on the product, market and value-added scope of foreign-owned subsidiaries. *Journal of International Management* 12(3): 266-283.
12. Dunning, J.H. & Lundan, S.M. (2009). Multinational enterprises and the global economy. *International Business Review*, 18(2): 211-213.
13. Edwards, R., Ahmad, A., & Moss, S. (2002). Subsidiary autonomy: The case of multinational subsidiaries in Malaysia. *Journal of International Business Studies*, 33(1): 183-191.
14. Erramilli, M.K. & Rao, C.P. (1990). Choice of foreign entry modes by service firms: Role of market knowledge. *Management International Review*, 30(2): 135-151.
15. Ferner, A., Almond, P., Clark, I., Colling, T., Edwards, T., Holden, L., & Muller-Camen, M. (2004). The dynamics of central control and subsidiary autonomy in the management of human resources: Case-study evidence from US MNCs in the UK. *Organization Studies*, 25(3): 363-391.
16. Garnier, G.H. (1982). Context and decision making autonomy in the foreign affiliates of US multinational corporations. *Academy of Management Journal*. 25(4): 893-908.
17. Gates, S.R. & Egelhoff, W.G. (1986). Centralization in headquarters-subsidiary relationships. *Journal of International Business Studies*, 17(2): 71-92.
18. George, V.P. & Zaheer, A. (2006). Geographic signaturs: Firm proximities and performance. *Academy of Management Best Conference Paper*.
19. Geppert, M. & Williams, K. (2006). Global, national and local practices in multinational corporations: Towards a socio-political framework. *International Journal of Human Resource Management*, 17(1): 49-69.

20. Geppert, M. & Clark, E. 2003. Knowledge and learning in transnational ventures: An actor centred approach. *Management Decision* 41(5): 433-442.
21. Geppert, M. & Matten, D. (2006). Institutional influences on manufacturing organization in multinational companies: The 'cherrypicking' approach. *Organization Studies*, 27(4): 491-515.
22. Gnan, L. & Songini, L. 1995. Management styles of a sample Japanese manufacturing companies in Italy. *Management International Review* 35: 9-26.
23. Goehle, D.G. (1980). *Decision making in multinational corporations*. Michigan: UMI Research Press.
24. Gupta, A.K. & Govindarajan, V. 2002. Cultivating a global mindset. *Academy of Management Executive* 16(1): 116-126.
25. Hall, P.A. & Soskice, D. 2001. *Varieties of capitalism: The institutional foundations of comparative advantage*. Oxford: Oxford University Press.
26. Hedlund, G. (1981). Autonomy of subsidiaries and formalization of headquarters–subsidiary relationships in Swedish MNC's.In Otterbeck, L., editor, *The Management of Headquarters–Subsidiary Relations in Multinational Corporations*. Aldershot: Gower.
27. James, R.M. & Anthony, J.V. (1995). Multinational firms and the new trade theory, *Working Paper Series*: NBER. No 5036.
28. Jarillo, J.C. & Martinez, J.I. (1990). Different roles for subsidiaries: The case of multinational corporations in Spain. *Strategic Management Journal*, 11(7): 501-512.
29. Jindra, B., Giroud, A., & Scott-Kennel, J. 2009. Subsidiary roles, vertical linkages and economic development: Lessons from transition economies. *Journal of World Business*, 44(2): 167-179.
30. Johnston, S. (2005). *Headquarters and subsidiaries in multinational corporations: Strategies, Tasks and Coordination*. Newyork: Palgrave Macmillan.
31. Johnston, S. & Menguc, B. (2007). Subsidiary size and the level of subsidiary autonomy in the multinational corporation: a quadratic model investigation of Australian subsidiaries. *Journal of International Business Studies*, 28(5): 787-801.
32. Lane, C. (1989). *Management and labour in Europe: The industrial enterprise in Germany, Britain and France*. Aldershot: Edward Elgar.
33. Männik, K., Urmas, V., & Helena, H. (2005). The role of country, industry and firm specific effects of the autonomy of a multinational corporation's subsidiary in central and east European countries. *Journal of Economics and Business*, 3(1): 101-133.
34. Ohmae, K. (1990). *The borderless world: Power and strategy in the interlinked economy*. New York: Free Press.
35. Paterson, S.L. & Brock, D.M. (2002). The development of subsidiary management research: review and theoretical analysis. *International Business Review*, 11(2): 139-163.
36. Rugman, A.M. & Oh, C.H. (2009). Does the regional nature of multinationals affect the multinationality and performance relationship? *International Business Review*
37. Sanders, G.S. & Carpenter, M.A. (1998). Internationalization and firm governance: The roles of CEO compensation, top team composition, and board structure. *Academy of Management Journal*, 41 (2), 158-178.
38. Santos Silva, J.M. C & Tenreyro, S. (2006). The Log of Gravity. *Review of Economics and Statistics*, 88 (4): 641-658.
39. Soskice, D. (1999). Divergent production regimes: Coordinated and uncoordinated market economies in the 1980s and 1990s.In Kitschelt, H., Lange, P., Marks, G., & Stephens, J.D., editors, *Continuity and change in contemporary capitalism*. Cambridge: Cambridge University Press.
40. Streeck, W. (2002). Lean production in the German automobile industry: A test case for the convergence theory.In Dore, S. Berger & R., editor, *National diversity and global capitalism*. New York: Cornell University Press.
41. Taggart, J.H. (1997). Autonomy and procedural justice: A framework for evaluating subsidiary strategy. *Journal of International Business Studies*, 28(1): 51-76.
42. Taggart, J.H. & Hood, N. (1999). Determinants of autonomy in multinational corporation subsidiaries. *European Management Journal*, 17(2): 226-236.
43. Takeuchi, R., Shay, J.P., & Li, J. (2008). When does decision autonomy increase expatriate managers' adjustment? An empirical test. *Academy of Management Journal*, 51(1): 45-60.
44. Vachani, S. (1999). Global diversification's effect on multinational subsidiaries' autonomy. *International Business Review*, 8(5): 535-560.
45. Varblane, U., Mannik, K., & Hannula, H. (2005). Autonomy and performance of foreign subsidiaries in transition countries, *Working paper No 780*: William Davidson Institute.
46. White, R. & Poynter, T. (1984). Strategies for foreign owned subsidiaries in Canada. *Business Quarterly*, 48(4): 59-69.
47. Whitley, R. (1999). *Divergent capitalism. The social structuring and change of business systems*. Oxford: Oxford University Press.
48. Young, S. & Tavares, A. T. (2004). Centralization and autonomy: back to the future. *International Business Review*, 13(2): 215-237.
49. Zaheer, S. (1995). Circadian rhythms: The effects of global market integration in the currency trading industry. *Journal of International Business Studies*, 26(4): 699-728.